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The Effects of Industrialization on a Rural County:

Comparison of Social Change in Monroe and Noble Counties of Ohio

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THE EFFECTS OF INDUSTRIALIZATION ON A RURAL COUNTY: COMPARISON OF SOCIAL CHANGE IN MONROE AND NOBLE COUNTIES OF OHIO

By

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INTRODUCTION

Technological changes, both in agriculture and in industry, have caused problems of adjustment in many rural counties of the nation. Decline in agriculture and the consequent out-migration of population have disturbed the equilibrium of the communities. These communities can be found all over the nation, but those with the most serious adjustment problems are largely concentrated in a few areas. One of these areas is the Appalachian area and its fringes. Included in this area are some of the river counties of Southeastern Ohio. One of these is Monroe County.

This is a report of what happened in Monroe County when a large industrial establishment was built in it. This report discusses the changes in the characteristics of the people and the changes in their social systems resulting from the rather sudden introduction of a new and quite different ingredient into the local environment.

At the time that construction of the new industry began, Monroe County was a good example of a depressed area. Underemployment was extensive. As one of the low income counties designated by the U.S. Department of Agriculture report to the President in 1955[3] it was at or near the bottom of the list of Ohio counties on most measures of growth and socio-economic well-being.[4] It had been designated as one of two "pilot" counties in Ohio under the Rural Development Program.

In a sense, Monroe County had been bypassed by the main stream of development in the nation in recent years. In spite of fairly intensive development, its principal resource, agriculture, was not sufficient to maintain even a stable population. Its other resources--coal deposits, a river location with its potential for transportation, and the beauty of its rugged scenery--were unexploited. It was one of the most isolated counties in Southeastern Ohio (Figure 1). There were no bridges connecting it with the more industrially developed West Virginia side of the river and no railroads or major highways bisected the county. There was no regular bus service, no motels, and travelers could not even obtain a salad in any

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[3]Development of Agriculture's Human Resources, A Report on Problems of Low-Income Farmers, U.S. Department of Agrciulture, April 1955.

[4]Wade H. Andrews, Characteristics of the Population, Housing and Agriculture in Ohio, Mimeo. Bulletin, Agricultural Economics 304, Wooster, Ohio, 1959, Table 48.

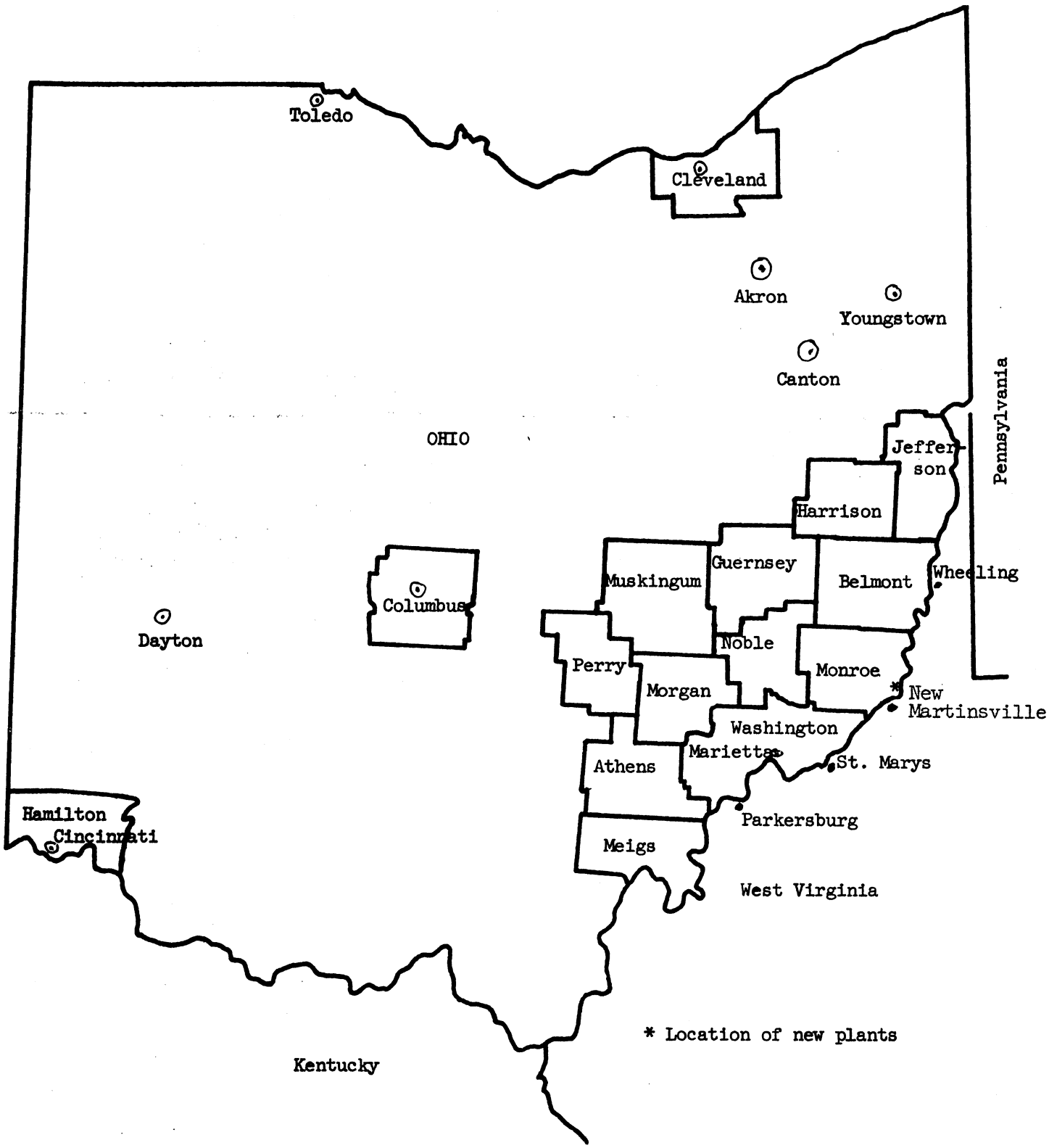


Figure 1. MAP OF OHIO SHOWING LOCATION OF MONROE AND NOBLE COUNTIES.

The only bridges across the Ohio in 1956-57 were at Wheeling and St. Mary's. A new bridge was completed 4 miles down river from the new plant site in 1960.

of its small restaurants. Nearly six decades of population decline and nearly 100 years of net out-migration had changed the character of its population and its institutions.

The year 1956 was the beginning of a new era for Monroe County. That spring Ormet Corporation, a 50-50 subsidiary of Olin Mathieson Chemical Corporation and Revere Copper and Brass, began to exploit the coal and river location resources by starting construction of a multi-million dollar (est. at $290 million) aluminum reduction plant on Buckhill Bottom, along the Ohio River about midway between Clarington and Hannibal. Construction was completed in 1959. As many as 2,900 persons were employed in the construction of these new facilities and eventually this operation involved a permanent payroll of about 2,500 to 2,700 employees. Another company, the Ohio Ferro-Alloys, started construction of a $3 million plant on the Ohio River in the Northeast corner of Monroe County early in 1957. It was in full production in 1959 with about 150 employees.

Research Design

Two procedures useful in measuring social change were combined in the design of this study: Longitudinal analysis of data from two surveys 5 years apart and comparative analysis of data from two matched counties, one of which experienced rapid expansion of industry. The benchmark survey was made in 1957 while construction of the new industrial plants was getting underway in Monroe County and the second survey 5 years later in 1962. Since construction of the new plants was begun in 1956, the benchmark data were not a true representation of the "before" situation. However, a true "before" measure is seldom, if ever, feasible because just a rumor of such a major development as this would have an effect.

The use of data from parallel surveys in a nearby county with similar characteristics provided control measures of change for comparative analysis during the 5-year period. Assuming that changes which occurred in Noble might have also occurred in Monroe without the addition of the industrial plants, comparison of trends provided an estimate of the kind and amount of change which could be attributed to the addition of industry to Monroe. Although Monroe and Noble counties were not identical in all characteristics, they were sufficiently alike in their 1957 characteristics and in past experiences to make such a comparison feasible. Wherever possible, original differences were accounted for in the analysis. The fact that the two counties were adjacent reduced to a minimum the possibilities of differential area effects. At the same time, however, it increased the possibility of the extension of the effects of industrial expansion to the control county. Noble County's common border with Monroe County was on the side opposite the location of the plant, which meant that any Noble County resident would have had to commute at least 30 miles in order to take a job at one of the new plants. Sample information on employment at the new plants indicated that this distance was sufficient to minimize direct impact on Noble County through employment. Only about 1 percent of the Noble County labor force in 1962 had a job at one of the plants in Monroe County.

The research design, as diagrammed in a report of the benchmark data for Monroe County[5], was as follows:

[5]Andrews, Wade H., Ward W. Bauder, and E. M. Rogers, Benchmarks for Rural Industrialization: A Study of Rural Development in Monroe County, Ohio, Research Bulletin 870, November 1960, Ohio Agricultural Experiment Station, Wooster, Ohio. The benchmark report was limited to data for the "treatment" county to minimize the possibility of any action being stimulated by comparison of conditions in the two counties.

Study Areas	Time		Amount of Change
	Before (1957)	After (1962)	
Experimental County (Monroe)	A	C	(A - C)
Control County (Noble)	B	D	(B - D)

Sampling

Respondents for the 1957 survey were identified by area sampling procedures. The sample was drawn by the Statistical Standards Division of the Statistical Reporting Service of the U.S. Department of Agriculture. Data were collected by personal interviews with local persons, principally school teachers, as interviewers. The restudy in 1962 used the same sample segments except that the number of segments was systematically reduced by 10 percent to reduce costs and several new segments were added to provide proportional representation of new housing areas which had developed since the benchmark survey.

In Monroe County the 10 percent reduction in the number of original sample segments resulted in only a 3 percent reduction in number of households interviewed because it was largely offset by the addition of the housing area segments and an increase in number of households in some of the original segments. In Noble County, fewer additional new housing area segments were required and some of the original segments contained fewer households. As a consequence, there were 19 percent fewer households in the second survey.

The number of sample segments used, the number of interviews obtained in each survey and the number of households included in both surveys are shown in Table 1.

Table 1. Number of sample segments, number of households interviewed and number of households included in both surveys.

	Monroe		Noble	
	1957	1962	1957	1962
Number of sample segments		105		65
Number of households interviewed	607	588	332	262
Number of households in both surveys	358		154	
Number of households in 1957 survey only	249		178	
Number of households in 1962 survey only		230		114

Essentially the same procedures were used in both surveys except that in the 1962 survey, instead of local school teachers, college students were used as interviewers. The restudy schedules were the same as the schedules used in the benchmark study except for several added questions about the industrial plants and several changes in verb tense required by the passage of time. In addition, three short supplemental schedules of questions were developed for use with special populations in the 1962 Monroe County survey. These included a schedule for organization leaders, a schedule for business operators, and a schedule for households in the

general sample with a member employed in one of the new industrial plants.

In addition to the primary data gathered through interviews, data from secondary sources, such as county and state reports and census tabulations, were used to identify differential changes in the populations of the county and in various institutional systems represented. By comparing the two counties with the state as a standard, additional inferences could be made regarding the direction and amount of changes which could be credited to the influence of industrial development.

The analysis was guided by the general hypothesis that the addition of a major industrial plant to Monroe County would produce measurable changes in the characteristics of its population and in its social organization. The benchmark report posed a number of specific hypotheses which were used as an outline for this analysis:

I. Population Characteristics

1. The total population of the county will increase rapidly as a result of industrialization.

2. The proportion of the population in the working age range (20-65) will increase.

3. The average size of household will increase.

4. The average level of living of people in the county will increase.

5. Educational levels in the county will rise and educational programs will brought up to date. This will include changes in school organization.

II. Residential Migration

1. There will be higher rates of migration in Monroe County.

2. Longer distances will be involved in the average migration. However, there will be less migration of young adults out of the county.

3. Former residents with ties in the area will move back to the county.

4. The relative number of farm people in the county will decrease in proportion to the number of people in rural nonfarm places.

III. Occupational Status

1. The actual and relative number of farmers will decrease while the number in nonfarm occupations will increase.

2. The relative number of persons in nonmanual occupations will increase in proportion to the number of persons engaged in manual occupations.

3. Skills represented in the labor force will become more varied and specialized.

IV. Agriculture

1. Farmers in the county will adopt new farm practices more rapidly relative to the rest of the state.

2. Mechanization of farming will increase.

3. The proportion of farmers with nonfarm employment will increase.

V. Social Organization

1. Leadership in formal organizations will become less concentrated.

2. More power groups will evolve and leadership functions will shift to new groups.

3. "Newcomers" to Monroe County will assume leadership positions formerly held by "old-timers."

4. Informal visiting will take place over a wider geographical area.

5. Community realignment will occur and neighborhood systems will be replaced by larger community systems.

6. Informal social participation with family and kin will decrease in importance and be replaced by more formal participation and nonkinship association.

VI. Communication

1. Monroe County residents will become less local and more cosmopolitan in their use of communication media.

2. Highway systems will change and create new communication networks.

3. The use of the Extension Service will increase and new patterns of use will evolve.

VII. Attitudes Toward Industry

1. More favorable attitudes toward industry will develop in Monroe County.

2. Attitudes toward farming will become less favorable in comparison to attitudes toward industry.

The authors were aware of the difficulty of obtaining reliable indicators of social change over a period as short as 5 years. Measurement of social change with present tools also is, at best, rather crude. Therefore, while in some instances intercounty differences or before and after differences were large enough to leave little doubt that a significant change had occurred, in other instances the results were only suggestive.

TRENDS IN POPULATION AND GENERAL SOCIAL STRUCTURE

Because census data and administrative data collected by various state and federal agencies were available for a longer period than 5 years, they provide a better picture of trends in certain characteristics of the population and major institutions of the two counties than the survey data. These are presented early in the report to provide a general picture of the direction of change in each county as a background for the discussion of the survey data. In some cases census data could be combined with survey data to extend the period of observation.

Growth Trends

Settlement in Ohio began along the Ohio River about 1791 and spread inland. Monroe, a river county, was established early (in 1813) but Noble was not established until 1851. The period of most rapid growth for the area was the three decades before the Civil War. Monroe reached its peak population in 1850 with 28,351 people. The peak in Noble came three decades later (1880) with a count of 21,138 people. Population remained fairly constant during most of the period 1860-1900. In the decade 1880-1890, the population of Noble County started a downward trend which continued through 1960. A similar trend started in Monroe County in the 1900-1910 decade. Except for the decade of the great depression, 1930-1940, decline was continuous and substantial until 1950. As a consequence, by 1950 Monroe County contained only 56 percent as many people as it had in 1860 and Noble County, which started to decline earlier but at a slower rate, had 60 percent as many (Figure 2).

Population trends were altered during the 1950-1960 decade in both counties. The rate of decline slowed to less than 1 percent in Monroe and to 6.5 percent in Noble. Assuming that new job opportunities generated by the addition of new industry would encourage many people, particularly youth and young adults, to stay in the county who might otherwise have found it necessary to leave for employment, we expected that net out-migration would decline in Monroe County as compared to Noble and that the population decline which had characterized the two counties for the past 60 years would be lessened in Monroe and perhaps even reversed.

It is not possible to determine from census data exactly the number of persons leaving an area or moving into it over a period of time. However, it is possible to obtain a good estimate of the net product of these two migration streams by accounting for births and deaths in the area and comparing the size of the population at the beginning of the period with the size of the population at the end of the period. On this basis, the net out-migration from Monroe County during the decade 1940-1950 was 23.4 percent of the 1940 population. The corresponding figure for Noble was 22.9 percent. During the 1950-1960 decade, the net out-migration rate from Monroe County declined to 6.5 percent. The rate for Noble County also declined, but not as much, to 13.9 percent.

With prevailing local birth and death rates for the 1950's, a net out-migration of approximately 5.5 percent would have resulted in no change in the total population of either county during the decade. Noble County's net out-migration was considerably higher than this. Thus, its population continued to decline but at a slower rate than in the previous decade. At 6.5 percent, Monroe's net out-migration was only a fraction higher than excess births over deaths. Thus, the decline for the decade was small. Monroe's 1950-1960 rate of decline

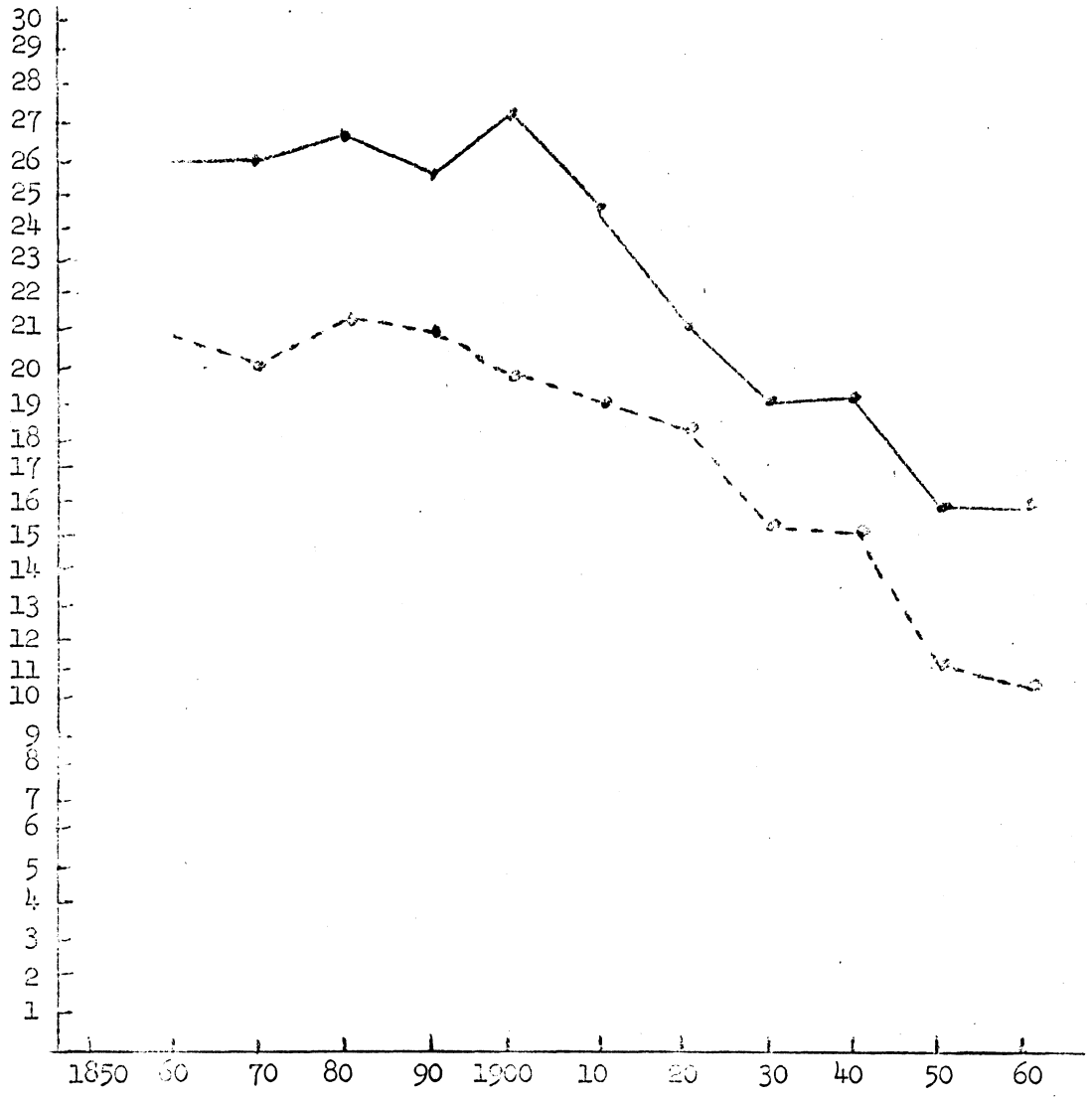


Figure 2. Population in Monroe and Noble Counties, 1860-1960

Source: Statistical Abstract - Ohio, 1960, Tables A4, 5 and 6.

was the smallest of the ten Ohio counties which declined and the smallest of the rural counties in that part of Ohio.

The abruptness of the changes in population trends which probably occurred cannot be demonstrated with decennial census figures because the event that caused the change occurred in the latter half of the decade. If the plant construction had begun in 1950 or 1951 instead of 1956, the effect would have been more easily observed with census data. If available, estimates of net migration for each year in the decade would no doubt reveal more dramatically the extent of the change in growth trends. In accord with the long-term trend, it is likely that net out-migration and population decline continued in Monroe

County at a rate similar to or higher than the rate in Noble during the first part of the decade. That the rate for the decade was lower than in the preceding decade can be surmised from the data for the decade for Noble and other surrounding counties but there is no reason to believe that it was much different in Monroe than in Noble in the first part of the decade. If this were true, it would then have required that net in-migration occur in Monroe County between 1956 and 1960 in order to reduce the rate of population decline for the decade to 0.6 percent. Although some out-migration no doubt continued, there must have been more in-migration. This in-migration, plus a gain from natural increase, probably produced a small upward turn in population numbers for Monroe County in the latter part of the decade.

Changes in Geographic Distribution of Population

Expansion of industry and consequent expansion in employment opportunities draws population to the point of the expansion. Typically the stimulus to population growth declines with distance from the location of the industry.

Before 1957, the distribution of population in Monroe County was largely determined by the agricultural resources and the location of the county government. The narrow valleys and narrow ridges of the eastern half of the county supported an agricultural population larger than might be expected from the topography but there was no stimulus for the development of large population centers. Although several small towns had developed along the river, none contained more than 400 or 500 people in 1950. Even the county seat town, Woodsfield, near the geographic center of the county contained fewer than 2,500 people. It could scarcely be described as a major concentration of population but was the largest town in the county. The population decline which characterized the county in the period before 1950 was general. Every township, including the township within which the county seat was located, lost population during the 1940-50 decade.

Figure 3 shows how these trends were altered during the 1950's. Instead of the usual gradient pattern of growth with the largest increases near the new plant site, a mixed pattern of growth occurred. Only 6 of the 18 townships in the county increased in population. Although these included Ohio township in which the plants were located, this township did not register the largest growth. It increased by only 103 persons or less than 10 percent while the largest increase occurred in Center township, the location of the county seat more than 20 miles from the plant site.

Two adjacent river townships, Salem to the north and Lee to the south, also increased in population. Salem includes Clarington, the only incorporated village within a 20-mile range of the plant site, but Clarington lost population rather than gained. Built on a narrow shelf of the river valley, the construction of a new highway required the destruction or removal of many of Clarington's homes. Although census data are not available, judging from the amount of new home construction it is obvious that Hannibal, an unincorporated town in Lee County, increased in population.

No doubt a major part of the stimulus to population growth occurred across the river in West Virginia rather than in Monroe County, Ohio. Although there was no bridge within 30 miles, ferry service was available and many employees used this or rowed boats across the river during construction and the early period of operation of the plants.

The advantages of living in New Martinsville, a city of 5,607 in 1960, apparently outweighed the disadvantages of crossing the river by ferry or rowboat.

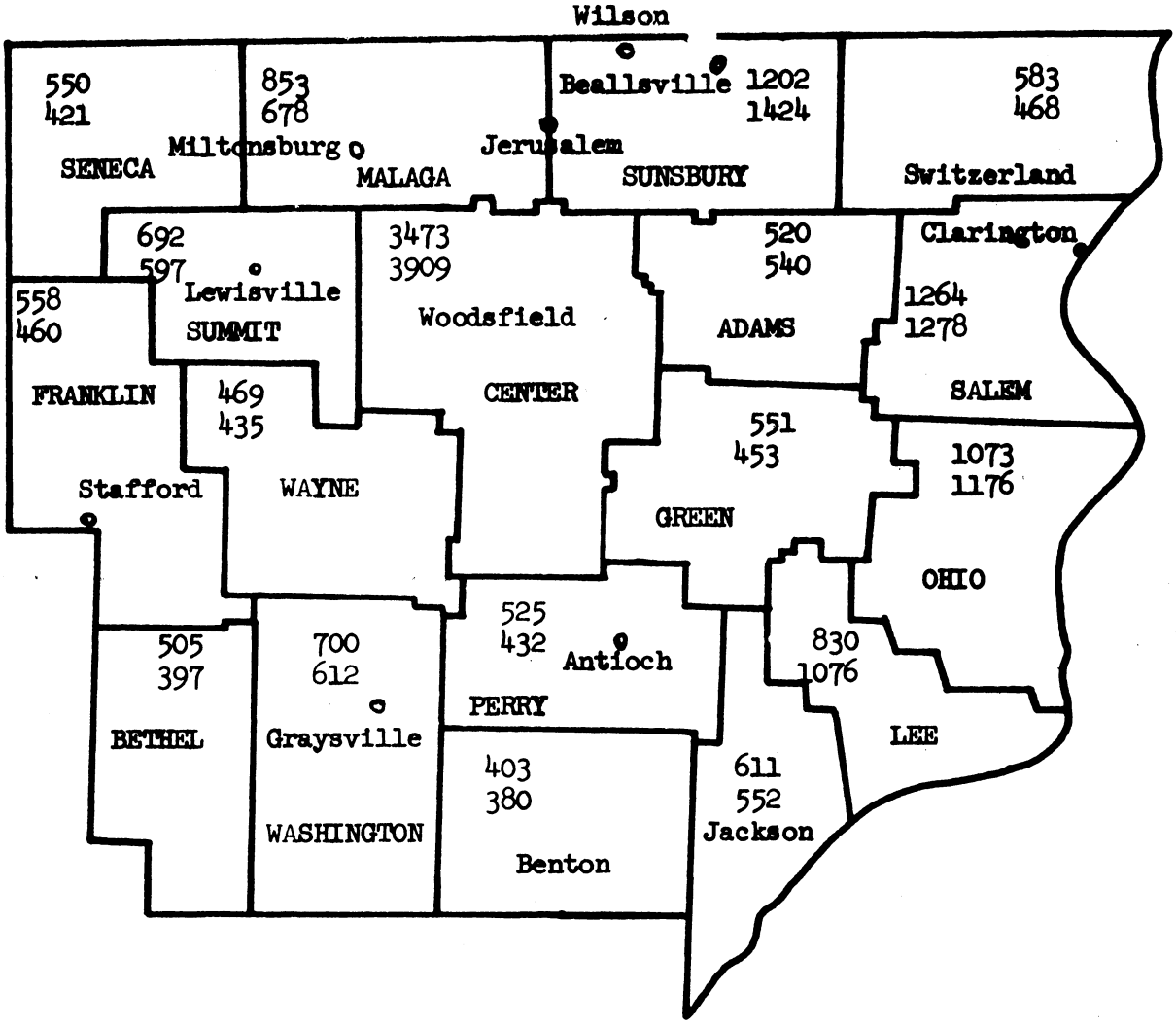


Figure 3. Population of townships in Monroe County 1950 and 1960. The top figure is the 1950 population.

Source: U.S. Census of Population, Ohio, 1960, Table 25.
U.S. Census of Population, Ohio, 1950, Table 6.

The absence of a nearby town large enough to provide the services most town or city dwellers require was, no doubt, the principal reason for the unusual pattern of population growth. Furthermore, the rough topography of the river townships would discourage attempts to develop an urban center.

Some time after construction of the plants, the State of West Virginia began construction of a toll bridge to provide easier access to the plants for workers living in West Virginia. Opened for traffic September 1961, it provided the only bridge crossing for a distance of 90 miles along the river and was used by many workers at the plant, including most of the top management personnel who chose to live in New Martinsville rather than in Monroe County on the Ohio side of the river.

Rural-Urban Distribution of Population

Normally an expansion of nonagricultural employment opportunities in an area will be accompanied by a shift of population from rural to urban residence or a shift from farm or open country to town residence.

In 1950, 27 percent of the population of Monroe County lived in incorporated villages or towns. By 1960, this proportion had increased to 32 percent. A similar but slightly smaller shift occurred in Noble County, from 31 to 35 percent. If the new industrial plants had not been located so far from established population centers, it is likely that the increase in town or village population would have been considerably greater in Monroe County.

The two Noble County villages which grew were Caldwell, the county seat which increased from 1,767 to 1,999 population, and Dexter City, which increased from 695 to 775 population. The latter is located in the mining area where some reactivation occurred during the latter part of the decade.

Change in Population Characteristics

Because migration is selective, changes in certain population characteristics usually occur when the direction and volume of migration changes. We made predictions concerning three characteristics: (1) that the proportion of population in the working age group would increase, (2) that educational levels would rise, and (3) that the average size of households would increase.

Age Structure

Heavy and continuous out-migration over a period of years affects the age structure of a population. Generally, persons in the youth and young adult age groups are more mobile than persons of other age groups. As a consequence, the age distributions of populations experiencing heavy out-migration reflect proportionally large reductions in the number of young adults. After a time, age-sex pyramids of such populations assume a distinct hourglass shape, as illustrated by the pyramid for Monroe County. In Figure 4, the Monroe pyramid is superimposed on the pyramid for the State of Ohio for 1960. Although both display the hourglass shape, proportions in the younger ages are relatively smaller and proportions in the older age groups (over 55) are relatively larger in Monroe County than in the State of Ohio.

The age distribution of the population of Noble County was similar to that of Monroe County but was somewhat more columnar in shape. It contained relatively fewer people in the age groups 5-19 through 40-44 and relatively more people in the age groups 50-54 through 75-79 (Figure 5).

Since expansion of employment opportunities in an area of heavy out-migration will have the effect of reducing net out-migration motivated by the search for employment, the proportion of persons of employable ages, particularly youth and young adults, in the area should increase.

Sample estimates indicate that the proportion of persons 16 to 64 in the population increased during the period 1957 to 1962 from 54.6 to 57.0 in Monroe County, while it declined from 52.6 to 51.6 in Noble County. Thus, the burden

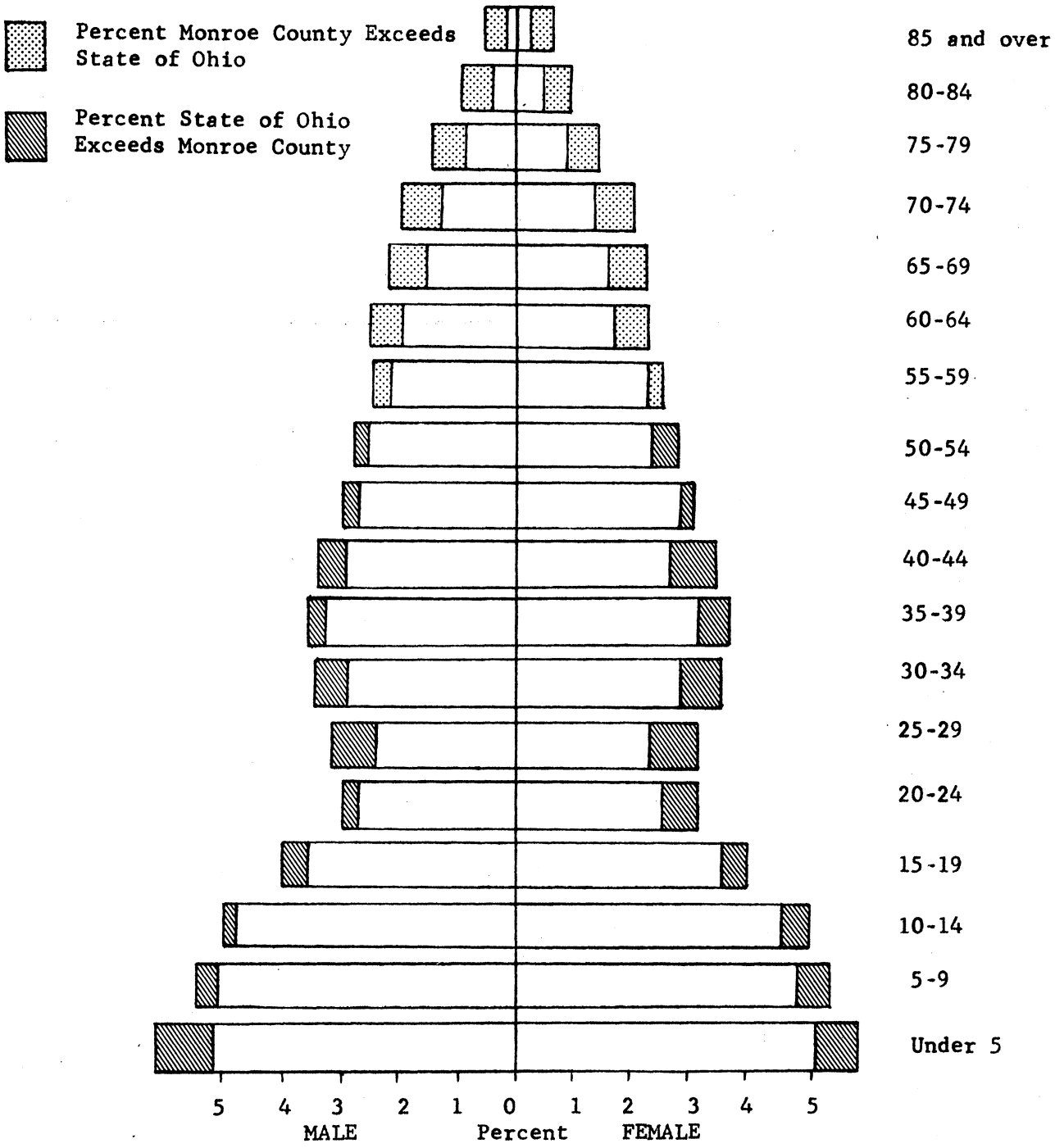


Figure 4. Age-Sex Pyramid for Ohio and Monroe County, 1960.

Source: United States Census of Population, 1960, Ohio (Table 17), Monroe County (Table 27)

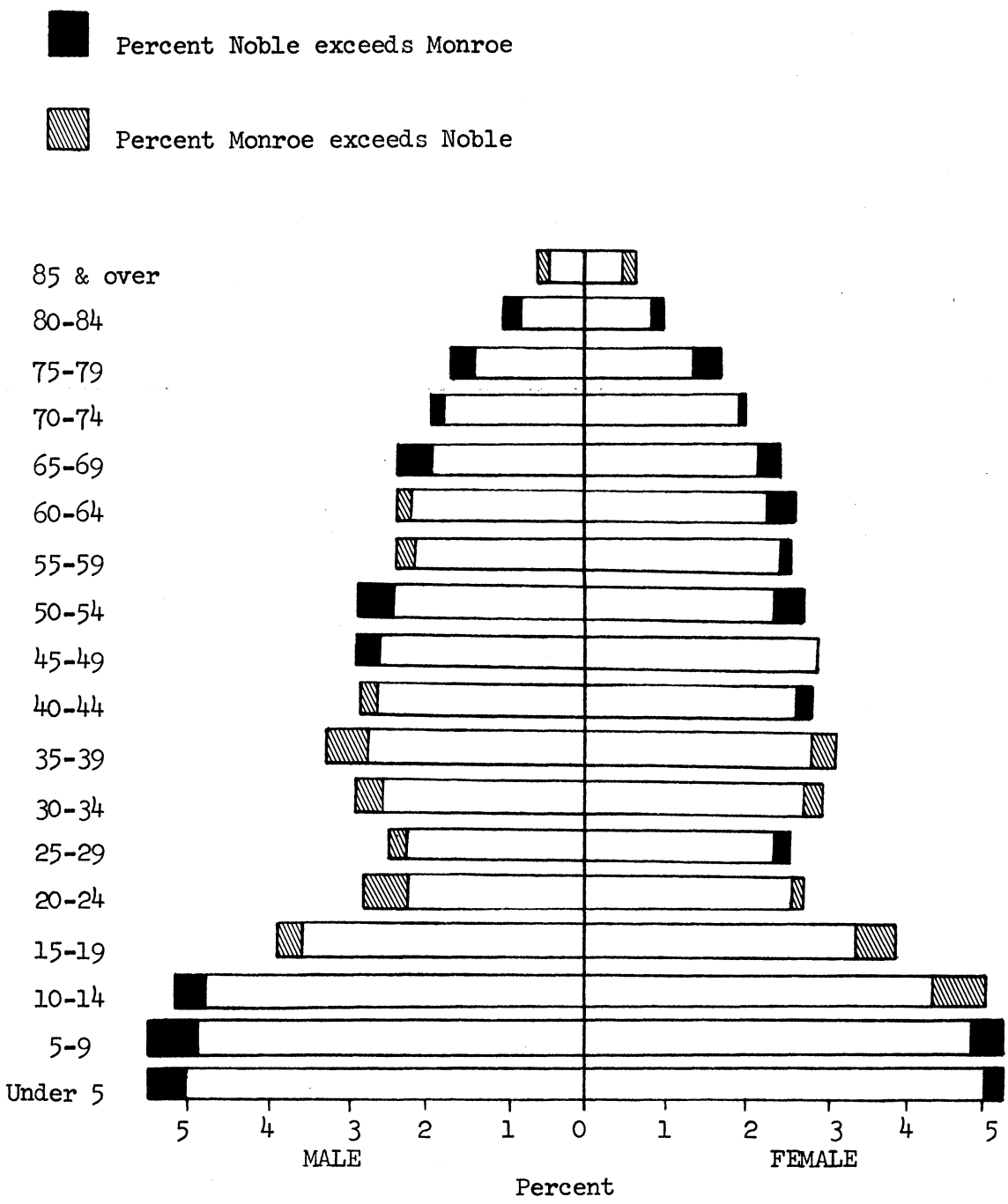


Figure 5. Age-Sex Pyramid for Monroe and Noble Counties, 1960.

Source: U.S. Census of Population, 1960, Ohio, Table 27.

of support for persons in the dependent age groups on persons of employable age declined in Monroe County, while it increased in Noble County. The effect of the expansion of employment opportunities was to reduce net out-migration of young and early middle age adults. Thus, the proportion of persons aged 20-45 remained relatively stable in Monroe County, declining from 27.4 to 27.1 percent compared with Noble County, where the decline was from 27.1 to 25.6 percent (Table 2).

Median Age

By reducing out-migration of youth and young adults with small children, added employment opportunities have the effect of lowering the median age of the population. But increasing birth rates with no change in death rates or net migration of people in a particular age group, such as the retirement age group, can also reduce the median age. The former process has occurred rather generally in the United States in recent years.

Based on changes in migration and changes in the proportions of the population of working age, the median age of Monroe County's population should have declined more than that of Noble County. This was true for the decade 1950-60 according to census data. Median age in both populations declined during the

Table 2. Percent distribution by age group and median age of the sample populations of Monroe and Noble counties, 1957 and 1962.

	Monroe		Noble	
Age Group	1957	1962	1957	1962
Under 15	29.3	27.8	28.4	31.8
15-24	12.7	14.6	10.6	12.8
25-34	11.3	8.7	11.6	9.8
35-44	12.3	13.1	11.2	10.5
45-54	11.2	12.9	11.1	14.0
55-64	9.0	10.0	9.7	7.0
65+	14.2	12.9	17.4	14.1
TOTAL	100.0	100.0	100.0	100.0
Median Age	33.0	33.7	34.4	30.4

period 1950-60, from 32.5 to 31.6 percent in Monroe and from 32.5 to 32.3 percent in Noble. Sample data, however, indicate a decline in Noble but a small increase in Monroe between 1957 and 1962 (Table 2). The difference appears to have been caused by a greater reduction in the numbers of older persons (55 and older) in Noble than in Monroe County during the 1957-62 period. The proportion of the population 55 and older was relatively stable in Monroe, declining from 24.2 to 22.9 percent while it declined from 27.1 to 21.1 in Noble. This suggests that there was a net out-migration of older persons from Noble County during the 1957-62 period.

Education

Addition of job opportunities in the professional, technical and other more highly skilled occupational categories increases the demand for people with higher education. Therefore, to the extent that the new plants in Monroe County offered such job opportunities, they would tend to attract people with more education into the county and thus cause an increase in average educational levels in the population. Other factors, however, cause changes in educational levels over time. Principal among these is the tendency to extend the period that youth are expected to remain in school. Thus, the replacement of older by younger people through the process of natural increase results in an increase in median educational level. 6/ Median educational levels increased in both counties but the increase was somewhat greater in Noble than in Monroe County (Table 3). The percent of the population 25 years and older with some college training presented a similar pattern. At first glance, these results appeared to be opposite to the expected results. More detailed analysis, however, indicates that a difference in age distribution and a substantially higher level of schooling in Noble County in both 1957 and 1962 have combined to obscure the effects of industrialization.

Table 3. Median years of schooling and percent with some college education of the population 25 years and older in Monroe and Noble counties, 1957 and 1962.

	Median years of schooling			Percent with some college education		
	1957	1962	Dif.	1957	1962	Dif.
Monroe	8.84	9.00	+0.16	8.62	8.97	+0.35
Noble	9.87	10.88	+1.01	7.18	8.33	+1.15

6/ Bureau of the Census, U.S. Department of Commerce Current Population Reports, "Educational Change in a Generation, March 1962," Series P-20, No. 132, September 22, 1964.

By using cohort analysis, i.e., by comparing a group born in a specific 5-year period with the same group 5 years later, it was possible to account for the changes in educational level over time in both counties and to demonstrate that industry had the expected impact on educational levels in Monroe County. Table 4 shows that the educational levels of the four 5-year cohorts of adults most affected by migration -- those in the following age groups: 25-29, 30-34, 35-39 and 40-44 -- in Noble County changed very little during the 5-year period 1957-1962, while the educational levels of three of the four comparable cohorts of Monroe's population increased substantially.

Since it is unlikely that residents over 25 added any to their formal schooling, it is obvious that the increase in median levels of education for the three age cohorts in Monroe County resulted from an interchange of population, with in-migrants having higher levels of schooling than out-migrants.

Table 4. Median years of schooling of four age cohorts in Monroe and Noble counties population, 1957 and 1962.

Persons born in	Age in 1957	Median Years of Schooling					
		Monroe			Noble		
		1957	1962	Dif.	1957	1962	Dif.
1928-32	25-29	10.67	12.39	+1.72	12.24	12.23	-0.01
1923-27	30-34	12.12	12.10	-0.02	12.33	12.27	-0.06
1918-22	35-39	10.81	11.67	+1.14	12.27	12.33	+0.06
1913-17	40-44	9.18	9.67	+0.51	12.79	12.11	-0.68

In contrast, the three youngest cohorts in Noble County remained essentially constant, and the 40-44 cohort decreased in median level of education. Since there was likely some migration both ways in Noble County, it appears that in-migrants matched out-migrants in education in the three younger age groups. Either out-migrants had more education than nonmigrants or in-migrants had less education than out-migrants or both in the 40-44 Noble County cohort. Thus, although the median educational level of all persons 25 and over increased more in Noble County than in Monroe County, cohort analysis shows that this was probably due to the effects of time-related factors independent of the industrial stimulus in Monroe County and to the fact that a higher general level of education existed in Noble County at the beginning of the period. The cohort data are in accord with the expected pattern of change in the quality of the labor force.

Size of Household

A decline in the out-migration of youth and of younger adults from a population will tend to increase the average size of household in the population by increasing the relative proportion of young families with children. Sample data

indicated, however, a smaller increase in the median size of household in Monroe County than in Noble County during the 1957-62 period (Table 5). The increase in median size in Noble was largely the product of an increase in the proportion of 3, 4, and 5-person families.

Table 5. Median size of household in Monroe and Noble counties, 1957 and 1962.

	1957	1962	Dif.
Monroe	3.44	3.45	+0.01
Noble	3.26	3.51	+0.25

Although the comparison of overall medians does not show the expected impact of industrial expansion on household size, cohort comparisons indicate that there were small increases in the median size of households of heads in the four youngest age cohorts (heads aged under 25, 25-29, 30-34, and 35-39 in 1957) in Monroe County and small decreases for the corresponding age cohorts in Noble County (Table 6). In fact, the only cohort which registered an increase in Noble County was the cohort that was 55-59 in 1957, indicating that the increase in overall median in Noble resulted from a change in the number of households in the different age of head categories rather than from changes in the median size for any particular cohort.

Data on number of households by age of head show that the number and proportion of households of heads 55 and older declined substantially more in Noble County than in Monroe (from 40.6 to 25.4 compared with 36.3 to 26.6). Since these are households of families predominantly in the "empty nest" stage of the family life cycle and contain an average of about $2\frac{1}{2}$ persons per household, this could account for the differential change in overall median size of household. The greater reduction in households of older heads in Noble suggests the possibility that some net out-migration may have occurred.

The cohort data tend to support the hypothesis that industrial expansion is associated with an increase in size of household but differences are too small to be conclusive. Changes from other factors which cannot logically be linked with industrial expansion are of sufficient magnitude to mask the effect of industrial expansion when overall medians are used as the measure of change.

MIGRATION

In addition to the changes in net migration discussed earlier, changes occurred in the rates of migration, in the direction and distance moved, and in expressed intentions to migrate.

Migration Rates

An increase in job opportunities, particularly in an area where opportunities were previously very limited, will tend to increase mobility as people move

Table 6. Median size of household by age cohort of heads of households, in Monroe and Noble counties, 1957 and 1962.

	Median size of household					
	Monroe			Noble		
Age in 1957	1957	1962	Dif.	1957	1962	Dif.
Under 25	3.21	4.92*	+1.71	4.25	4.16*	-0.09
25-29	4.19	4.66	+0.47	4.33	4.26	-0.07
30-34	4.83	5.20	+0.37	5.00	4.75	-0.25
35-39	4.93	4.96	+0.03	4.91	4.91	0.00
40-44	4.46	4.04	-0.42	4.62	4.08	-0.54
45-49	4.35	3.72	-0.63	4.33	3.55	-0.78
50-54	3.45	3.00	-0.45	3.56	3.31	-0.25
55-59	2.93	2.33	-0.60	2.80	2.87	+0.07
60-64	2.82	2.58	-0.24	2.81	2.54	-0.27
65+	2.48			2.48		

*Includes only members of this cohort who were aged 25-29 in 1962.

in order to take the new jobs. Migration rates, as expressed by the median number of moves per household during a specified period, increased both in Monroe and in Noble counties but the increase was substantially greater in Monroe County than in Noble County (Table 7). The assumption is that the greater acceleration of mobility in Monroe was due to changes in residence associated with people taking new plant jobs and other new jobs produced as secondary employment effects of the new plants.

Table 7. Median number of moves per year of households in Monroe and Noble counties for the 10-year period, 1947-1957 and the 5-year period, 1957-1962.

	1947-1957	1957-1962	Dif.
Monroe	.0052	.0135	+.0083
Noble	.0073	.0129	+.0056

Direction and Distance Moved

Before the new plants were built, a large part of the residential migration of Monroe County people probably involved movement of families and individuals out of the county in search of employment. An increase in employment opportunities in the county would tend to decrease this type of migration and increase proportionally the number of moves within the county.

Since net out-migration was substantially lower in Monroe County than in Noble County during the 1950-60 decade, it is apparent that either fewer people left Monroe County, more moved into Monroe County, or both. No doubt migration included both individuals and whole households. Since the mobility histories obtained were for households currently living in one of the sample segments, we had no direct information on the number of whole households leaving the county either prior to the construction of the plants or since. However, information on the movement of individual members of the sample families obtained in the 1962 survey provided limited evidence of the impact of industrial expansion on cross-county moves of this class of people. Among the children of the 1962 Monroe sample households leaving home during the period 1952-1956, 66 percent left Monroe County (Table 8). Of those who left home during the period 1957-1962, 70 percent left the county. In contrast, the corresponding figures for Noble County show a reduction in the proportions leaving the county (from 74 to 67 percent).

Table 8. Percent of children leaving 1962 sample households who moved out of the county 1952-56 and 1957-summer 1962 in Monroe and Noble counties by sex.

County	1952-56			1957-62		
	Male	Female	Total	Male	Female	Total
Monroe	73 (45)	62 (68)	66 (113)	85 (13)	68 (22)	74 (35)
Noble	75 (77)	62 (61)	70 (138)	58 (36)	77 (30)	67 (66)

Since the expected reduction in movement of single persons out of the county did not occur in Monroe and since migration rates of households increased, it is very likely that the ratio of intra-county moves to intercounty moves increased.

Some movement out of the back country to places near a town and to hard-surface roads in Monroe County is indicated by the fact that the median distance from sample households to a town and the percent of households 500 feet or more from a hard-surface road decreased. Median distance to a town actually increased in Noble County but proportion of open-county houses on or near a hard-surface road decreased. The proportion of households living more than 500 feet away from a hard-surface road was larger in Monroe than in Noble in both periods. It declined 12 percentage points between 1957 and 1962 in Monroe and declined only 5 percentage points in Noble (Table 9).

The change in percent of houses on or near hard-surface roads was only partly the product of migration. Part of it was the result of the construction of

Table 9. Median number of miles from town and percent of open-country households living 500 feet or more from a hard-surface road, Monroe and Noble counties, 1957 and 1962.

	Monroe			Noble		
	1957	1962	Dif.	1957	1962	Dif.
Median miles from town (all households)	3.58	3.42	-0.16	2.71	3.02	+0.31
Percent 500 feet or more from a hard-surface road:						
All households	38.4	26.3	-12.1	23.6	18.6	- 5.0
Households in both surveys	36.3	25.8	-10.5	21.8	18.4	- 3.4

new hard-surface roads, with more roads built in Monroe than in Noble County. In the period 1957 to 1962, 32.5 miles of new roads were built in Monroe, compared with 13.7 miles in Noble. The impact of new road construction on the percent of the occupied houses on or near all-weather roads is shown by the data for households which had not moved and thus were included in both surveys.

The proportions of such households more than 500 feet from a hard-surface road declined from 36.3 to 25.8 in Monroe and from 21.8 to 18.4 in Noble County (Table 9).

Intentions to Migrate

Responses to questions about young people leaving or planning to leave the county provided additional information on changes in migration patterns. In 1957, about 90 percent (92 in Monroe and 88 in Noble) of the respondents in both counties said that when youth finished school they were expected to leave the county (Table 10). Only 2 percent in Monroe and 4 percent in Noble said they were expected to stay. The remainder did not know or did not answer. In 1962, respondents in Noble were even more inclined to expect youth to leave than in 1957 but the proportion of Monroe respondents expecting youth to leave the county had dropped to 74 percent and 12 percent said that they were expected to stay.

Parents answered differently, however, when asked about the expressed intentions of those of their own children, age 16 to 24, who were still at home. This, of course, was a residual group as many of those wanting to leave had already left. Among those who were reported as decided, the majority in both counties intended to remain. In 1957, 75 percent of Monroe County youth had expressed an intention of staying in the county, nearly 13 percent intended to leave, and 12 percent were undecided. In contrast, only 47 percent of Noble County youth intended to remain while 29 percent planned to leave and 24 percent were undecided. By 1962, the differences between the counties had almost disappeared, mainly because the proportion intending to remain dropped from 75 to 49 percent

Table 10. Percent of respondents reporting youth were expected to leave the county when they finished school in Monroe and Noble counties, 1957 and 1962.

	1957	1962
Monroe	92	74
Noble	88	91

in Monroe County (Table 11). With the expansion of employment opportunities, one might have expected an increase in the proportion of Monroe County youth expressing an intention to stay in Monroe County. Instead the opposite happened.

Table 11. Percent of youth 16-24 expressing an intention to remain in or leave Monroe and Noble counties, 1957 and 1962.

	Monroe				Noble			
Year	Remain	Leave	Undecided	N	Remain	Leave	Undecided	N
1957	75.5	12.9	11.5	139	46.9	28.6	24.4	49
1962	49.1	36.5	14.4	167	46.8	37.1	16.1	62

When the youth were split into two groups, those aged 16-19 and those aged 20-24, it became clear that most of the change in migration intentions occurred in the younger group. Reductions in the proportion of the older group planning to remain were relatively small and about the same in each county. Reductions in the proportion of the younger group intending to remain were much greater in Monroe than in Noble (Table 12). This could very well reflect an increase in the proportion of the younger group expecting to continue their education in colleges or vocational training schools which, of course, would require that they leave the county. One anticipated product of industrial expansion is an increased awareness of the need for advanced education and vocational training. Vocational offerings in the local school were increased, indicating a general increase in awareness of the value of technical education.

Farm-Nonfarm Residence

The expectation that the number of farm people in the Monroe County population would decline was correct but the decline was proportionally greater in Noble than in Monroe County. The proportion of all households in the farm residence classification decreased and the proportion in open-country nonfarm in-

Table 12. Percent of youth expressing an intention to remain in or leave Monroe and Noble counties, by age group, 1957 and 1962.

	Monroe				Noble			
	Remain	Leave	Undecided	N	Remain	Leave	Undecided	N
Age 16 through 19								
1957	73.8	13.1	13.1	107	40.5	29.7	29.7	37
1962	39.2	45.0	15.8	120	41.9	41.9	16.3	43
Age 20 through 24								
1957	81.2	12.5	6.2	32	66.7	25.0	8.3	12
1962	74.5	14.9	10.2	47	57.9	26.3	15.8	19

Table 13. Percent of households by residence classification in Monroe and Noble counties, 1957 and 1962.

Residence	Monroe		Noble	
	1957	1962	1957	1962
Farm	27.5	25.2	33.9	28.7
Open-country nonfarm	32.1	35.2	30.6	32.5
Town	40.4	39.6	35.5	38.8

creased in both counties. The proportion in villages increased in Noble and decreased in Monroe County (Table 13.)

The fact that the plants were built in the open country rather than in or near a major population center (Figure 3) suggests an explanation for the smaller decrease in farm population and larger increase in open-country nonfarm populations in Monroe County. We have already noted that the location of the plant in the open country away from existing population centers had an unique effect on the redistribution of the population. Although several new housing developments were started in the county seat and elsewhere in the county to accomodate the

demand for the new homes, many new homes were built by individuals along the highways leading to the plants. Many old homes in the open country, some of which had been vacant, were renovated and newly occupied. Construction of new houses or renovation of old homes along the highways and roads leading to the plants was occurring at a time when 25 to 30 percent of the new houses in several village housing developments remained unoccupied for extended periods. Apparently many prospective home owners preferred an open country location nearer the plants to new housing built in Woodsfield and Wilson.

CHANGE IN THE LABOR FORCE

Labor Force Participation

The labor force of an area can increase through an increase in population and an increase in labor force participation rates. We noted earlier that the proportion of the population in the so-called productive ages, 16-64, increased compared with those in the dependent ages (under 16 and 65 or older) and that this increase was substantially greater in Monroe than in Noble. The question that follows is: Was this increase in population in the employable ages accompanied by an increase in the rate of labor force participation?

Nationally, the proportion of males 14 and older in the labor force dropped slightly from 78.9 to 77.4 percent between 1950 and 1960 while the proportion of females 14 and older in the labor force increased from 29.0 to 34.5 percent. These same trends occurred in both Monroe and Noble counties. The decrease in male participation rates was greater, while the increase in female participation rates was proportionally greater in Noble and proportionally less in Monroe than the national trend (Table 14). Since labor force participation varies with age, the greater decreases in Monroe and Noble counties compared with the nation could have been caused by an older and more rapidly aging population. Survey data supplied no clues as to why female participation rates in Noble County should have increased so much.

If the expansion of industry in Monroe County had any positive effects on labor force participation rates during the decade, these effects were obscured by other factors. In fact, changes during the entire decade 1950-60 were more negative in Monroe than in Noble County. Sample data show similar trends. In 1957, Monroe County rates were lower than Noble County rates for both males and females. Between 1957 and 1962, labor force participation rates declined for males and increased for females in both counties. The major difference was that the increase for females was greater in Noble County.

It does not appear from the above figures that industrial expansion had any effect on labor force participation rates in Monroe County.

However, since labor force participation varies with age and the age distributions of the population of the two counties varied, labor force participation rates for Monroe County were standardized to the age distribution of Noble County and the figures were re-examined. When this was done, there was some evidence of a positive effect of the industrial expansion in Monroe on labor force participation (Table 15). The participation rates for the total population 14 and older increased 2.4 in Monroe, and decreased 0.9 points in Noble when differences in age distribution were accounted for. It is still evident, however, that the

long period of limited employment opportunities and the accompanying heavy out-migration of youth and young adults had reduced the employability of the adult population somewhat more in Monroe County than in Noble County. This no doubt had some retarding effect on stimulus to labor force participation exerted by the new industrial plants.

Table 14. Proportion of male, female and total population, 14 and older, in the labor force in Monroe and Noble counties, 1950, 1957, 1960 and 1962.

County	Sex	1950[a/]	1957[b/]	1960[c/]	1962[b/]	1957-62 Change
Monroe	Male	74.2	74.2	69.0	69.9	- 4.3
	Female	15.7	13.9	16.7	17.4	+ 3.5
	Total	45.4	44.6	42.9	44.1	- 0.5
Noble	Male	77.0	77.8	72.6	73.8	- 4.0
	Female	14.9	17.3	22.1	28.3	+11.0
	Total	46.1	47.6	47.0	46.8	- 0.8

SOURCE: a/ Census of Population, 1950, Vol. II. Characteristics of the Population, Part 35, Ohio. Table 25, page 65 and table 43, pages 171 and 172.

b/ Sample data.

c/ Census of Population, 1960. PC(1)37C, Ohio General Social and Economic Characteristics. Table 54 page 236 and table 83, pages 377 and 378.

Table 15. Percent of population 14 and older in the labor force in Monroe and Noble counties, 1957 and 1962 when age distribution of Monroe County was adjusted to the Noble County distribution.

County	1957	1962
Monroe	42.1	44.5
Noble	47.6	46.8

Division of Labor Force Between Farm and Nonfarm Employment

With a general decline in the need for labor in agriculture, it is likely that much of the labor on farms in counties like Monroe and Noble is underemployed. The addition of substantial nonfarm employment opportunities in such a county would therefore tend to draw some of the surplus labor out of agriculture and into the nonfarm segment of the labor force.

The number and proportion of the labor force in farm work in Monroe County declined as predicted and the proportion of nonfarm workers increased. The same changes also occurred in Noble County, with the proportional decline in farm workers almost identical in both counties (Table 16). Both counties experienced a substantial shift from farm to nonfarm employment and it was not possible from these data to detect any impact of the new factories in Monroe on the shift.

Table 16. Percent of the labor force employed in farm and in nonfarm work in Monroe and Noble counties, 1950, 1957, 1960 and 1962.

	Monroe				Noble			
	1950[a]	1957[b]	1960[a]	1962[b]	1950[a]	1957[b]	1960[a]	1962[b]
Farm	32.0	27.0	12.8	15.6	33.1	30.0	18.8	16.9
Nonfarm	68.0	73.0	87.2	84.4	66.9	70.0	81.2	83.1

a/ U.S. Census data.

b/ Sample data.

EMPLOYMENT BY MAJOR INDUSTRY

Manufacturing

The new plants built in Monroe County are classified as manufacturing plants. So trends in manufacturing employment will reveal directly the impact of the new plants on the number of jobs available in the county. Data on the number of manufacturing jobs in the county covered by unemployment compensation indicate that throughout the early part of the 1950-60 decade, the number of jobs in manufacturing was from three to six or seven times higher in Noble than in Monroe County. Furthermore, the level of employment in manufacturing in Noble was relatively constant throughout the decade but rose rapidly after 1956 in Monroe County (Table 17).

The number of jobs available in a county and the number of these jobs held by residents of the county are not necessarily the same because people may commute across county lines to their jobs. This is especially likely to happen during periods of rapid expansion in job opportunities. Although the industry classification of the job held was obtained only for heads of households in the

Table 17. Average number of jobs in manufacturing covered by unemployment compensation law.

Year	Monroe County	Noble County	State of Ohio
1950	103	273	1,190,456
1951	129	397	1,312,126
1952	104	421	1,333,123
1953	86	550	1,420,158
1954	78	475	1,288,441
1955	74	469	1,344,154
1956	85	470	1,370,711
1957	291	426	1,342,329
1958	1,452	353	1,191,771
1959	2,689	396	1,260,336
1960	2,761	353	1,258,858
1961	2,728	352	1,175,896

Source: Ohio Bureau of Unemployment Compensation, Division of Research and Statistics, Table RS-203-1-B

survey, it was possible to estimate from sample data the number of manufacturing jobs held by residents of Monroe County by assuming that the ratio of manufacturing jobs to all jobs was the same for the total labor force as for heads of households. In 1957, 6.7 percent of the sample household heads held manufacturing jobs (Table 18). This proportion applied to the total labor force produced an estimate of the 291 manufacturing jobs held by Monroe County residents. This happens to be identical with the average number of manufacturing jobs reported to be covered by unemployment compensation in 1957 (see Table 17). This was before the new plants started operation and apparently there was little or no commuting into the county for work. Using the same procedure with 1962 data produced an estimate of 1,100 manufacturing jobs held by Monroe County residents in 1962. Since an average of 2,728 such jobs was reported as being covered by unemployment compensation in the county in 1961 and since there is no reason to believe that this number was substantially less in 1962, it is obvious that more than half of the new manufacturing jobs created in the county were held by persons living outside the county.

Table 18. Percent of employed heads of households with jobs in manufacturing in Monroe and Noble Counties, 1957 and 1962.

County	1957	1962
Monroe	6.7	20.9
Noble	11.2	7.1

Contract Construction

A similar phenomenon occurred in construction work. Table 19 shows the changes in employment in the construction industry in the experimental and control counties, 1950 to 1961. Noble County had some employees under the employee compensation law for contract construction from the beginning of the decade but there was so little construction in Monroe County that no employees were reported under the unemployment compensation law until 1953. Other than the years 1952 and 1957, which showed the effect of particular building projects. the number of contract construction employees remained at a rather stable level in Noble County throughout the period 1950 to 1961.

In Monroe County, on the other hand, employment varied widely from none or a very small number of covered employees in the years from 1950 through 1955 to 2,864 in 1957 and 2,627 in 1958 during the peak construction period for the new plants. After 1958, the number dropped back considerably but remained at a higher level than before.

Using the same procedure as used for employment in manufacturing, estimates from sample data for 1957 indicate that less than one-fifth of the construction workers employed in Monroe in 1957 were Monroe County residents.

Mining and Quarrying

Mining was a basic industry in both counties for many years. However, as Table 20 shows, the average number of workers in this industry declined during the last half of the decade in Monroe County. Noble County, on the other hand, maintained a fairly consistent level of employment in mining and quarrying until 1960, when some increase occurred.

Strip mining has been growing in importance in Noble County but, because the coal deposits are too deep, strip mining has not developed in Monroe. Some deep mining has been done but most of it remains to be developed. Surface mining in Noble County at the time of the study was well developed and was being carried out by three major companies.

Table 19. Average number of jobs in contract construction covered by unemployment compensation law.

Year	Monroe County	Noble County	State of Ohio
1950	--	21	110,348
1951	--	71	130,246
1952	--	142	132,286
1953	24	48	136,068
1954	32	68	153,286
1955	46	72	152,633
1956	680	53	153,428
1957	2,864	148	152,723
1958	2,627	--	142,297
1959	93	44	140,567
1960	145	48	132,333
1961	70	44	125,789

Source: Statistical Abstract - Ohio, 1960, Table F-7
Statistical Abstract Source: BUC, Division of Research and Statistics, Series RS-203

Service Industries

Employment levels in service industries tend to follow employment levels in manufacturing and extractive industries. The data reported here are limited to the reports of the U.S. Census of Business for 1954 to 1958. Table 21 shows that Monroe County had a larger number of service establishments than Noble County in both years. This reflects, primarily, differences in size of the total populations of the two counties. The number of establishments in Noble County increased from 34 in 1954 to 36 in 1958, while the number in Monroe County increased from 50 to 69.

Payroll data provide a rough measure of employment in the service industries. These show a very small increase for Noble County, but a very large increase for Monroe County. If the moderate increases in Noble County and the state of Ohio represent the gradual expansion of service industries which has been occurring generally in the nation, most of the $2\frac{1}{4}$-fold increase in Monroe County represents

Table 20. Mining and quarrying - average number of workers covered by unemployment compensation law.

Year	Monroe County	Noble County	State of Ohio
1950	173	170	27,373
1951	137	138	25,105
1952	136	191	23,656
1953	142	200	22,172
1954	157	179	20,095
1955	154	177	20,259
1956	117	197	21,638
1957	107	166	21,488
1958	92	168	19,558
1959	91	201	19,417
1960	90	255	19,282
1961	79	260	18,375

Source: Average Employment, Total Payroll and Average Weekly Earnings Under The Ohio Unemployment Compensation Law; Statewide and by County-1943 through 1962, Division of Research and Statistics, BUC.

Table 21. Number of establishments and payroll of retail trade establishments for 1954 and 1958, Monroe and Noble counties and the State of Ohio.

	Year	Monroe	Noble	State of Ohio
Number of establishments	1954	50	34	41,570
	1958	69	36	50,863
Payroll (in 1,000's)	1954	71	51	326,135
	1958	180	52	433,072

Source: U.S. Censuses of Business, 1954 and 1958.

an expansion in employment in service industries necessary to service the expanded employment in consturction and manufacturing.

Agriculture

Following state and national trends, the number of farms declined and the average size of farms increased in both Monroe and Noble counties from 1954 to 1959. The decline in number of farms was greater in Monroe but the increase in average size was greater in Noble County (Table 22). Between 1959 and 1964, however, the number of farms in Noble continued to decline in agreement with state and national trends but the number of farmers in Monroe remained almost constant.

The decline in the number of farms was accompanied by a substantial decline in acres of farm land. Again, the change between 1954 and 1959 was greater in Monroe than in Noble County. Acres of farm land declined 21 percent in Monroe County, compared with 8 percent in Noble and 7.4 percent in Ohio. Between 1959 and 1964 land in farms continued to decline in Noble and the state as a whole but actually increased in Monroe.

Trends in acres of cropland harvested followed similar patterns. The number of acres of cropland harvested in Monroe County declined 23 percent between 1954 and 1959, compared with 17 percent in Noble County. Between 1959 and 1964, however, cropland harvested declined less than 1 percent in Monroe and declined 10 percent in Noble and 5 percent in the state as a whole.

The reasons for the divergence of Monroe County from the general trend in the 1957-64 period are not readily apparent. Examination of trends in numbers of farms by economic size indicates one possible explanation. The number of part retirement farmers increased 46 percent in Monroe between 1959 and 1964, compared with declines of 19 and 21 percent in Noble County and the state of Ohio, respectively. Otherwise, the trends in distribution of farms by economic size were similar.

Sample data indicate another feature of the shift out of agriculture--an increase in the proportion of part-time farmers. The proportion of farmers with nonfarm jobs increased from 45 to 56 percent in Monroe and from 46 to 48 percent in Noble during the period 1957-62. The majority of these part-time farmers (90 to 95 percent) said they intended to continue with their nonfarm job and with the part-time farming.

Some change also occurred in the kind of agriculture in the two counties. A shift towards more and larger farm-forestry enterprises occurred in both counties. The increase came at the expense of pasture acreage in Monroe but at the expense of cultivated crops in Noble. Average acres of woodland per farm increased from 29 to 35 acres in Monroe and from 19 to 28 acres in Noble. Average cultivated acres per farm were constant at 34 acres in Monroe but declined from 44 to 37 in Noble. On the other hand, acres of pasture per farm decreased from 61 to 50 in Monroe but remained constant at 101 acres in Noble.

Farmers were asked to rank their three major farm enterprises in order of importance. By assigning three points to first rank position, two points to second rank, and one point to third rank, a composite score was derived for each

Table 22. Selected statistics on farms* and farm land, Monroe and Noble counties, and the State of Ohio, 1954 and 1959.

	Monroe County			Noble County			State of Ohio		
	1954	1959	1964	1954	1959	1964	1954	1959	1964
Number of farms	1,709	1,255	1,246	1,457	1,177	996	177,074	140,353	120,381
Acres in farming	206,915	163,568	171,616	187,764	171,484	161,647	19,991,586	18,506,796	17,519,167
Average size of farms (acres)	121.1	130.3	137.7	128.9	145.7	162.3	112.9	131.9	146.4
Cropland harvested farms reported	1,583	1,190	1,149	1,317	1,064	891	156,487	125,611	110,194
Acres of cropland harvested	40,175	30,824	30,752	36,598	30,370	27,301	10,339,955	9,743,467	9,276,437
Proportion of all land area in farms	71.1	56.2	58.9	73.5	67.2	63.3	76.2	70.6	67.2

*Definition of farm changed, between 1954 and 1959: Difference due to the definition would reduce the number of farms in 1954 by 39 farms in Monroe County and 39 farms in Noble County.

Source: U.S. Censuses of Agriculture, 1954, 1959 and 1964.

farm enterprise in the county. Comparison of these scores indicates that in both counties dairying, a relatively labor intensive operation, was replaced as a first ranking enterprise by beef cattle, a relatively extensive operation. Only one other change in rank order occurred in Noble County with grain advancing over hogs in importance. In Monroe County, however, several other changes in rank occurred. Poultry (intensive) dropped from third to fifth in importance; grain (extensive) advanced from fourth to third; hogs (median intensive) advanced from fifth to fourth; and forestry (extensive), which was not mentioned in 1957 in either county, was sixth while garden products (intensive) dropped to seventh (Table 23). In total, the changes in Monroe suggest a larger and more general shift from the more intensive to the more extensive enterprises than in Noble County.

Table 23. Composite scores of importance[a] and rank order of major farm enterprises in Monroe and Noble counties, 1957 and 1962.

	Monroe				Noble			
	1957		1962		1957		1962	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Dairy	288	1	169	2	138	1	90	2
Beef cattle	110	2	172	1	115	2	143	1
Poultry	71	3	32	5	41	3	44	3
Hogs	39	5	49	4	28	4	12	5
Grain	42	4	65	3	24	5	21	4
Garden	28	6	11	7	5	6	4	6
Forest			17	6			1	7

[a] Composite scores were obtained by assigning a value of three to an enterprise ranked as first in importance, a value of two to an enterprise ranked as second in importance and a value of one to an enterprise ranked as third in importance for each respondent; and by summing the scores for each enterprise.

EMPLOYMENT BY MAJOR OCCUPATION

White Collar vs. Blue Collar

Because of the association between advances in technology and the demand for professional and technical skills, we expected that expansion of industry would increase the proportion of white-collar, or nonmanual, workers relative to blue-collar, or manual, workers in the Monroe County labor force. According to

the U.S. Census of Population, the proportion of the labor force in white-collar jobs increased about equally during the 1950-60 decade in each county. The proportion in Monroe increased from 18.5 to 24.1 percent, while it increased from 17.8 to 23.2 in Noble County (Table 24). Sample data on occupational classification were available for only the heads of households but these data suggest that the proportion of the nonfarm labor force in the white-collar occupational categories actually decreased in Monroe County between 1957 and 1962 (Table 25).

Table 24. Percent of labor force in white-collar[a/] and blue-collar[a/] occupational categories in Monroe and Noble counties, 1950 and 1960.

Year	Monroe		Noble	
	Blue Collar	White Collar	Blue Collar	White Collar
1950	81.5	18.5	82.2	17.8
1960	75.9	24.1	76.8	23.2

Source: U.S. Censuses of Population, 1950 and 1960.

a/ White collar includes the census occupational categories: professional technical and kindred workers; managers, officials and proprietors except farm; clerical and kindred workers; and sales workers. Blue collar includes: craftsmen, foremen and kindred workers; operatives and kindred workers; and laborers except farm and mine.

The most logical explanation for this unexpected result is that Monroe County workers did not obtain their proportional share of the new white-collar jobs made available and that increases in employment of Monroe County residents at the new plants were proportionally greater in blue-collar than in white-collar jobs. This is understandable when it is recalled that Monroe County has experienced net out-migration over a period of 100 years or more. Migration is normally selective as to age and education, tending to remove from areas of net out-migration disproportionately large numbers of the young and the better educated. The cumulative effects of selective migration over an extended period of time result in distorted or abnormal age and educational level distributions. The resultant residual population is characterized by larger than normal proportions of older persons with limited formal education and smaller than normal proportions of youth and young adults who typically have higher levels of formal education.

There is little doubt that the plants were instrumental in increasing employment. Data on educational level also indicate some potential improvement in skill level of the labor force. Yet it is apparent from employment data that most of the increase in employment opportunities available to Monroe County residents occurred within the range of skills included in the blue-collar labor categories. The proportion of nonfarm employed heads of households in blue-collar jobs increased from 68 to 74 percent in Monroe, while it decreased very slightly from 75 to 74 in Noble County. Furthermore, among the 1962 Monroe County sample population, 90 percent of the workers employed at one of the plants were in blue-collar jobs compared with 68 percent for all other nonfarm workers.

Table 25. Number and percent of employed nonfarm heads of households in white-collar and blue-collar occupations in Monroe and Noble counties, 1957 and 1962.

	Monroe				Noble			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
White-collar occupations[a]	108	32.0	89	26.4	44	25.0	38	25.7
Blue-collar occupations[a]	215	63.6	225	66.8	121	68.8	95	64.2
Service occupations[a]	15	4.4	23	6.8	11	6.2	15	10.1
TOTAL	338	100.0	337	100.0	176	100.0	148	100.0

a/ White-collar occupations include the census categories: professional technical and kindred workers; managers, officials and proprietors except farm; clerical and kindred workers; and sales workers. Blue-collar occupations include: craftsmen, foremen and kindred workers; operatives and kindred workers; and laborers except farm and mine. Service occupations include: service workers and private household workers.

The availability of new opportunities generated by a new industry will vary with the age of the job applicant. The odds against an older person seeking a new job and getting it if he does seek it are greater than for a younger person. Furthermore, the kinds of jobs available may vary with the age of the applicant.

Increases in the number of nonfarm workers in blue-collar jobs in Monroe occurred in all age groups except the 65 and older group. Decreases in the number in white-collar jobs occurred in all age groups except those under 25. Increases and decreases in Noble County were smaller and occurred more or less randomly among the different age groups (Table 26). Cohort analysis indicates that the increase in Monroe County blue-collar workers was greatest in the cohort which was 25 to 34 years old in 1957 and next greatest in the cohort which was 45 to 54 years of age in 1957.

Insofar as formal education is a measure of skill level, it is obvious that the new plants drew more heavily from the higher skilled segment of the labor force than from other levels. The median years of schooling of plant workers was more than 2 years greater than other nonfarm workers in the 1962 Monroe County sample. Part of this difference was no doubt a function of differences in age distribution. Nevertheless, it is obvious that, even among the blue-collar occupational categories, the plants tend to select those with the most education.

Table 26. Occupation class of nonfarm heads of households by age cohort 1957 and 1962.

Age in 1957	White Collar						Blue Collar					
	Monroe			Noble			Monroe			Noble		
	1957	1962	dif.	1957	1962	dif.	1957	1962	dif.	1957	1962	dif.
Under 25	1	10	+9	1	6	+5	8	15	+7	5	10	+5
25 - 34	19	10	-9	7	7	0	34	51	+17	33	28	-5
35 - 44	31	23	-8	8	9	+1	45	53	+8	23	30	+7
45 - 54	26	14	-12	13	9	-4	34	46	+12	23	26	+3
55 - 64	15	10	-5	6	5	-1	27	35	+8	13	12	-1
65+	15	13	-2	9	2	-7	9	5	-4	15	5	-10

Increase in Occupational Diversity

We hypothesized that one effect of the industrial expansion would be an increase in occupational diversity. Aside from the possibility of the plants adding new occupational categories, the expansion of the labor force and the accompanying growth of the economy would tend to increase the variety of jobs available. A rough measure of these changes is provided by a count of the number of different general job categories represented in a list of full-time jobs held by five or more heads of households. This list for Monroe County included 15 categories in 1957 and increased to 18 categories in 1962. In Noble County, the number was 8 in both years. Detailed lists of specific job titles provide further evidence of the diversification of the occupational structure. In 1957, a total of 137 different job titles were mentioned. By 1962, this list had grown to 261.

Job Mobility

The addition of new job opportunities could be expected to increase job mobility. Respondents in 1957 were asked how many different jobs they had held since 1947 and 1962 respondents were asked how many different jobs they had held since 1957. By converting these figures into ratios of number of jobs held per year, it was possible to compare mobility for the two periods. The median number of different jobs per year for the 10 year period, 1947-1957, was 0.133 for Monroe and 0.129 for Noble. The rates increased to 0.179 and 0.175 for the period 1957-1962. Although the increase in mobility was substantial, it occurred about equally in both counties, indicating either that the impact of the new plants in Monroe on the total labor force was not significant or that compensating forces occurred in Noble which produced equivalent increases in mobility. The revival of mining operations in Noble County was probably a contributing factor.

As might be expected, job turnover varied by occupational class. In both

counties, it was greatest among heads of households who were nonfarm laborers and least among managers, officials, proprietors, and farm operators. This was true in both periods of observation, 1957 to 1962 and 1947 to 1957 (Table 27). Mobility rates increased in all major occupational categories in both counties between the two time periods and the increases were not markedly greater in one county than the other for most categories. The exception was the mobility rate for laborers, which increased substantially more in Monroe than in Noble. Since this was one of the categories most directly involved in the expansion in employment, it appears likely that the new plants were responsible.

Table 27. Job mobility rates (number of different) jobs per year for two periods of time, 1947 to 1957, and 1957 to 1962, for heads of households in Monroe and Noble County.

Occupational Class at end of period	Monroe		Noble	
	1947-57	1957-62	1947-57	1957-62
Professional, technical and kindred	0.12	0.28	0.13	0.32
Farmers and farm managers	0.13	0.26	0.11	0.28
Managers, officials and proprietors	0.13	0.24	0.14	0.22
Clerical	0.13	0.28	0.15	0.30
Sales	0.14	0.26	0.14	0.30
Craftsmen	0.18	0.31	0.17	0.26
Operatives	0.17	0.30	0.18	0.30
Service	0.20	0.29	0.13	0.24
Laborers	0.23	0.38	0.26	0.31

Another measure of job turnover is the percent of heads of households holding the same job for the 5 years, 1957 to 1962. These data add further evidence of the job mobility effect of the industrial plants in Monroe. The proportions having the same job for 5 years or more ranged from a high of 80 percent among managers, officials, and proprietors to a low of 43.8 percent among nonfarm laborers in Monroe County. In every major nonfarm occupational class, the percent of stable job holders was higher in Noble than in Monroe (Table 28). The lower percent of stable job holders in Monroe County, particularly among nonfarm laborers, appears to reflect the impact of the plants on job mobility.

Table 28. Percent of nonfarm heads of households holding the same job for the past 5 years by major occupational classification of present job.

Occupational Class	Monroe	Noble
Professional, technical and kindred	70.8	75.0
Managers, officials and proprietors	80.0	85.0
Clerical and Sales	64.3	*
Craftsmen	62.1	75.0
Operatives	57.1	69.4
Private household	*	*
Service	54.5	86.7
Farm laborers	*	*
Nonfarm laborers	43.8	65.2

* Less than 5 persons

The number of persons involved was too small to allow detailed analysis of patterns of change between occupational classes but several tentative observations can be made. Among Monroe County workers in the classes most likely influenced by plant employment opportunities (nonfarm laborers, operatives, and craftsmen), the majority of those changing jobs had a prior job in the same category. Where there was some shifting from one occupational class to another, the larger numbers were involved in shifts from one class to another among these three classes. Other shifts were minor and included shifts from farm operator to nonfarm laborer (6 persons) and from professional, technical, and kindred workers to operatives (4 persons).

Employment at the New Plants

At least one member, usually the head of the household, in one out of every nine households interviewed in Monroe County in 1962 held a job at one of the new plants. This proportion increased to one in eight when households with retired heads were omitted. Data from the 66 sample households with a plant employee provided an opportunity to note the selectivity of employment at the new plants and the direct effects of this employment on the person and his family.

In addition to the 66 households having a member employed at one of the plants, 73 households reported that a member tried unsuccessfully to get such a job. Another 29 households reported that someone had considered it but did not go so far as to try, while 420 or 71 percent of all sample families reported that no one

even considered trying. The latter group included 88 households in which the head was retired or unable to work. When these were omitted, the proportion of families not considering a plant job was reduced to 56 percent but it was still a majority.

We have already indicated that plant employment was selective as to age. In the first survey taken, while the plants were being built, younger persons were more likely to report that they considered a plant job as a potential reality for them. Furthermore, among those who considered such a job, those who tried to get one were younger than those who didn't try. Among those who tried, those who succeeded in getting a job were younger than those who were unsuccessful.

Number of years of schooling was also related to plant employment. Heads of households who were plant employees had a median of 12.2 years of schooling, while heads of households who did not consider trying for a job had a median of 8.8 years. The other two groups were intermediate and were in the expected order (Table 29).

Table 29 also shows that plant employee households, in comparison to other households, were more likely to be composed of husband-wife or unbroken families and, as a consequence, were larger on the average. They were also more mobile--both residentially and occupationally. They had lived in their present homes the shortest periods of time and were more likely to have changed communities in their last residential move. Thus, more of them were newcomers to the community. They had held more different jobs in the past 5 years and had been in their present job a shorter time. Fewer of them lived on farms and more of them lived in town.

Other New Employment Attributed to the Influence of the New Plants

It is difficult to measure exactly the secondary employment effects of the addition of factory jobs to a county. However, by asking for opinions on two questions, it was possible to obtain a rough measure. First, all Monroe County respondents in 1962 were asked if they thought the new plants had expanded job opportunities generally. Sixty-eight percent said yes. Second, those respondents not employed at the plant in 1962 were asked if they thought their current jobs were in any way a product of the expanded industrial activity in the county. Ten percent said that they thought their present jobs were dependent on the plants in some way. The proportion was higher (19 percent) among those who had been interested enough in the plants to try, though unsuccessfully, to get a plant job. It was lower (8 percent) among those who did not consider even trying for such a job.

INCOME

Three sets of data--average weekly earnings and total payroll in all employment subject to Ohio unemployment compensation regulations, estimated cash receipts from the sale of farm products, and census reports of median income for 1950 and 1960--provide a general picture of trends in income payments for the period 1950 through 1961. The 1962 sample data from families with a member employed at one of the new plants provide direct information on income effects.

Table 29. Characteristics of households with a member employed at one of the new industrial plants, compared with other households in Monroe County, 1962.

Characteristics	Households with a plant employee	Households which tried unsuccessfully for a plant job	Households which considered but did not try	Households which did not consider trying for a plant job
Percent	11.2	12.4	5.0	71.4
Median age of head	35.0	41.8	43.5	57.1
Median years of schooling of head	12.2	11.3	10.0	8.8
Percent husband-wife families	95.1	91.8	93.1	76.4
Median size of household	4.7	4.3	4.0	3.0
Median number of moves past 5 years	1.6	0.8	0.6	0.6
Median years lived in present house	3.1	7.1	11.6	14.7
Percent of movers changing community in last move	49.2	31.0	40.0	27.7
Percent living on farms	10.6	24.7	44.8	26.2
Percent living in open-country nonfarm houses	31.2	45.2	34.5	34.0
Percent living in towns or villages	57.2	30.1	20.7	39.2
Median number of different jobs in past 5 years	2.6	1.8	0.8	0.7
Median years in present job	4.2	5.5	10.5	8.6

Total Payroll in All Covered Employment

An indication of the abruptness of the change which occurred in payroll with the construction and operation of the new industrial plants is provided by Table 30. Total payroll in all industries covered by the Ohio unemployment compensation system increased gradually in Noble County, from just under 2 million in 1950 to 4.5 million in 1961. This trend closely paralleled the state trend. In Monroe County, however, the trend was quite different. Starting at just under 800,000, it rose gradually to just over 1 million in 1955. It quadrupled to 4.4 million in 1956 and then increased more than fivefold to nearly 22.2 million in 1957. The peak came in 1958 (28.3 million), which corresponded to the peak of employment in construction operations. It dropped back to 20.1 million in 1959 and then started a gradual rising trend which extended through 1961.

Table 30. Total payroll in all industries with employment subject to Ohio Unemployment Compensation Coverage.

(Numbers in Thousands)

Year	Monroe County	Noble County	State of Ohio
1950	795	1,980	7,197,839
1951	886	2,716	8,630,766
1952	1,289	3,476	9,294,098
1953	989	3,630	10,375,717
1954	997	3,398	9,971,552
1955	1,093	3,718	10,946,465
1956	4,441	4,009	11,785,868
1957	23,171	4,346	12,185,262
1958	28,308	3,705	11,301,721
1959	20,158	4,445	12,507,484
1960	20,244	4,641	12,836,502
1961	20,456	4,538	12,554,881

Source: BUC, Division of Research and Statistics, RS 203
Ohio Labor Market Information

Data on employment in manufacturing and construction indicated that not all of this very large increase in Monroe County payroll for the period 1957-61 was paid to Monroe County residents. Sample data on employment in construction in 1957 indicate that only about one-fourth of the increase in payroll due to construction work was paid to Monroe County residents. The 1962 survey indicates that only about one-third of the payroll involved in the operation of the new industrial plants was paid to Monroe County residents. Nevertheless, even after adjustment for the payroll paid to nonresidents, it is obvious that total payroll increased substantially more for Monroe County residents in the period 1956-61 than for Noble County residents for the residents of the state as a whole.

Average Weekly Earnings

Data on average weekly earnings provide a better measure of trends in the economic well-being of individuals and family units than total payroll because they do not involve the problem of allocating income between residents and nonresidents. They have one major limitation, however. It is necessary to assume that earnings were the same for residents as nonresidents. The fact that a greater proportion of residents than nonresidents was in blue-collar jobs indicates that average weekly earnings overestimate the level of income of residents. However, the figures are useful in noting trends. Trends in average weekly earnings in all covered employment were similar in both counties during the first half of the 1950-60 decade but averages were 60 to 80 percent higher in Noble. Earnings increased steadily in both counties at rates comparable to the increase in the state from 1950 through 1955 (Figure 6). In 1956, the average in Monroe began to show the effects of early construction activities and rose from $39 in 1955 to $73 in 1956. This was $6 higher than the average in Noble for 1956 but was still below the state average. In 1957, the Monroe average sky-rocketed to $125, 70 percent higher than the Noble County average and 35 percent higher than the state average. The Monroe average dropped to $121 in 1958 and then remained relatively steady after that. Although Noble County and Ohio state averages tended upward gradually after 1958, the Monroe County earnings remained higher than those in either Noble County or the state throughout the period 1958-61.

Weekly earnings trends varied by kind of industry. Figure 6 shows the trends in Monroe for three major industries during the period 1946-61. It is clear from Figure 7 that most of the increase in average weekly earnings for the period 1956-61 resulted from two activities, both associated with the new plants. These were the construction work and the operation of new manufacturing plants. Construction had its major effect on earnings in the period 1956 through 1958. This was the period of peak employment in construction and the period of highest average earnings in construction. Average earnings in manufacturing rose rapidly in 1956 and 1957 and continued to rise until 1959, when the new plants were in virtually full operation.

The impact of construction activities on average weekly earnings in the years 1956-58 is more remarkable because of the fact that before 1953 there were too few persons employed in construction in Monroe County to provide an average weekly earnings figure.

Earnings in mining and quarrying were about on a level with earnings in manufacturing early in the decade. However, because earnings in mining and quarrying increased very little during the decade, they were much below earnings in manufacturing and construction at the end. The expansion in employment and increase in

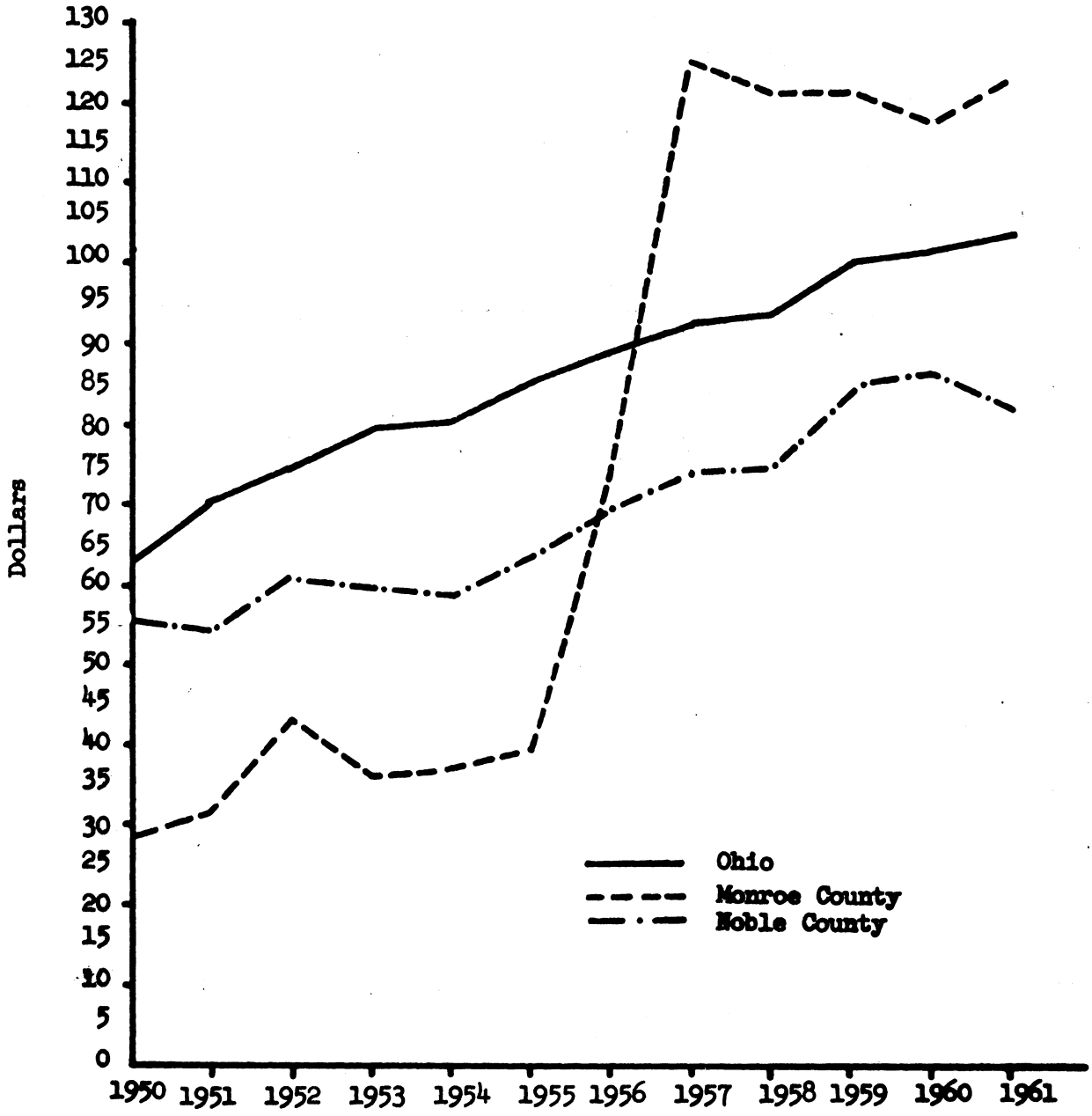


Figure 6. Average weekly earnings in employment subject to Ohio Unemployment Compensation - all industries - Monroe and Noble Counties and Ohio, 1950-1961.

Source: Ohio Labor Market Information
Ohio Bureau of Unemployment Compensation. RS 203-00

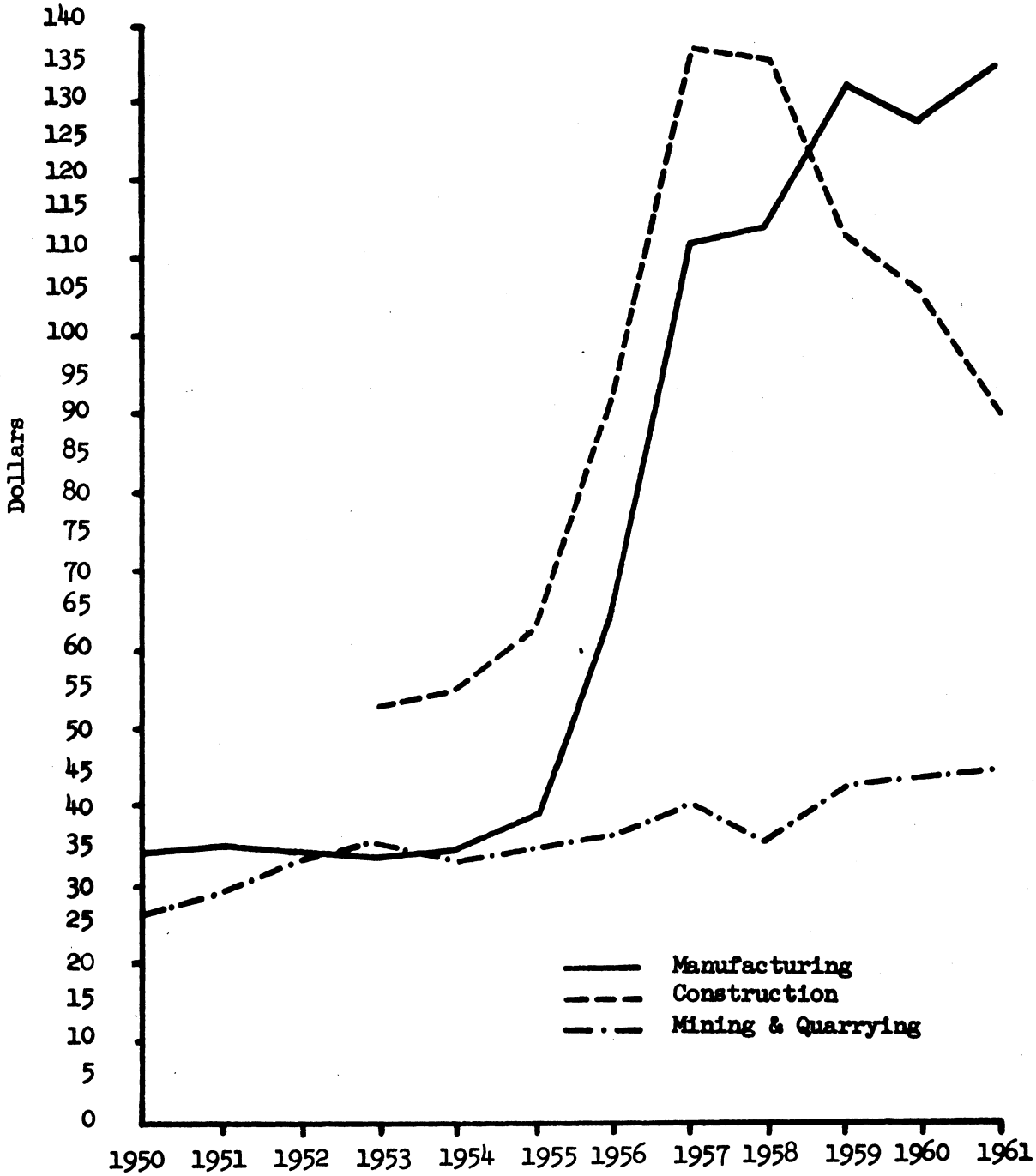


Figure 7. Average weekly earnings in manufacturing, construction and mining and quarrying, Monroe County, 1950-1961.

Source: Ohio Labor Market Information
Ohio Bureau of Unemployment Compensation. RS 2-3-56

weekly earnings in manufacturing and construction apparently had no carry-over effect on earnings in mining and quarrying, indicating a rather low level of transference between mining and quarrying and the new industries.

The effect on average weekly earnings in contract construction employment of the heavy demand for construction workers in Monroe County during the period of plant construction is illustrated by Figure 8. The strong correlation between weekly earnings and extent of construction activities is reflected in both the Monroe and Noble County curves. Earnings were highest in Noble County in 1952 and again in 1957 during periods of peak employment on specific projects in that county. As already noted, they were highest in Monroe County during 1957 and 1958, the peak period of construction activities on the new plants being built there. In contrast to these fluctuating trends, the trend in the state as a whole was gradually and steadily upward throughout the 12-year period.

The question of whether or not the expansion of industry in Monroe County had any lasting effect on wage levels in construction work cannot be answered without more recent data. The downward trend in average weekly earnings in construction for Monroe County since 1958 raises some doubts regarding the permanence of the beneficial effects on construction wages.

Proof that the new plants in Monroe County pay higher average wages than were paid previously in Monroe County or were paid currently for employment in manufacturing in Noble County or the state as a whole is found in Figure 9. During the pre-expansion period (1950-55), average weekly earnings in manufacturing in Monroe were only about half the average in Noble County and less than half the average for Ohio. In 1956, Monroe County average earnings began to increase and by 1957 were higher than earnings in Noble and in the state. Earnings continued to rise rapidly through the first full year of operation of the new plants, 1959, and since have leveled off at a point considerably above earnings in Noble County and the state as a whole (see Figure 9).

The trend of average earnings in mining and quarrying tells a different story (Figure 10). Average weekly earnings in this industry have consistently remained lower in Monroe than in Noble. Not only did they not respond to competition from expanded employment in construction and manufacturing but they remained at a level less than half the average for Noble throughout the period. Noble County averages, on the other hand, were comparable with averages for the state as a whole and increased at about the same or a slightly higher rate during the period. Furthermore, in Noble County they were more comparable in volume with earnings in other industries. The lower level of earnings in mining and quarrying for Monroe is likely related to differences between the counties in the organization of the mining industry. For the most part, mining in Noble County is highly mechanized strip mining and three major companies account for most of the activity. The coal deposits in Monroe are too far below the surface for strip mining and most of the mining is done by small operations which are apparently relatively independent of wage competition from other fields of employment.

Estimated Cash Receipts from the Sale of Agricultural Products and from Government Payments

Cash receipts from the sale of agricultural products in both counties followed the general decline of agricultural income in the state during the decade of the 1950's but both counties lagged behind the state in the upward trend which

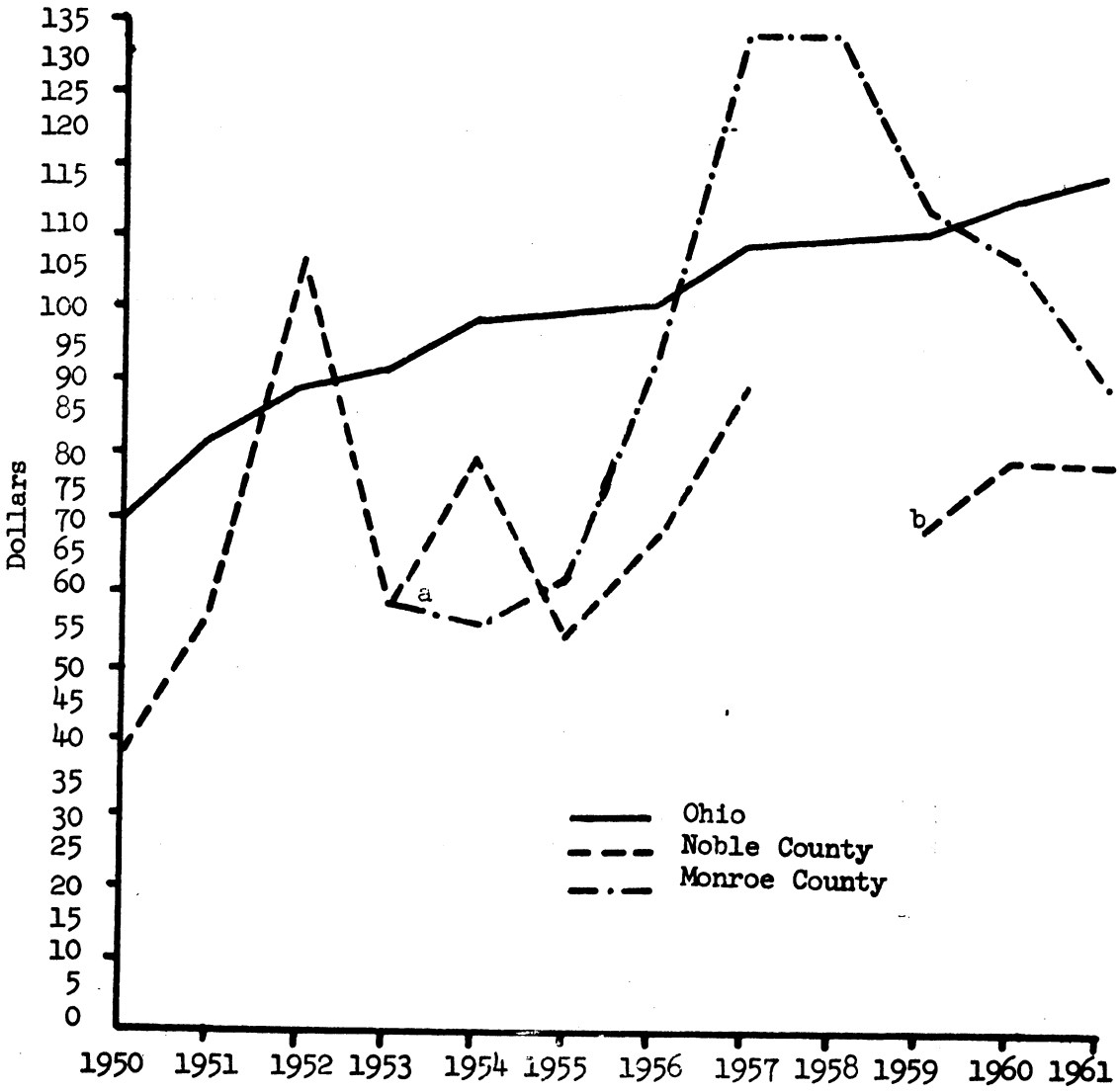


Figure 8. Average weekly earnings in contract construction.
a/ Data unavailable for Monroe before 1953
b/ Data unavailable for Noble for 1958

Source: Ohio Labor Market Information
Ohio Bureau of Unemployment Compensation. RS 203-56, RS 203-61

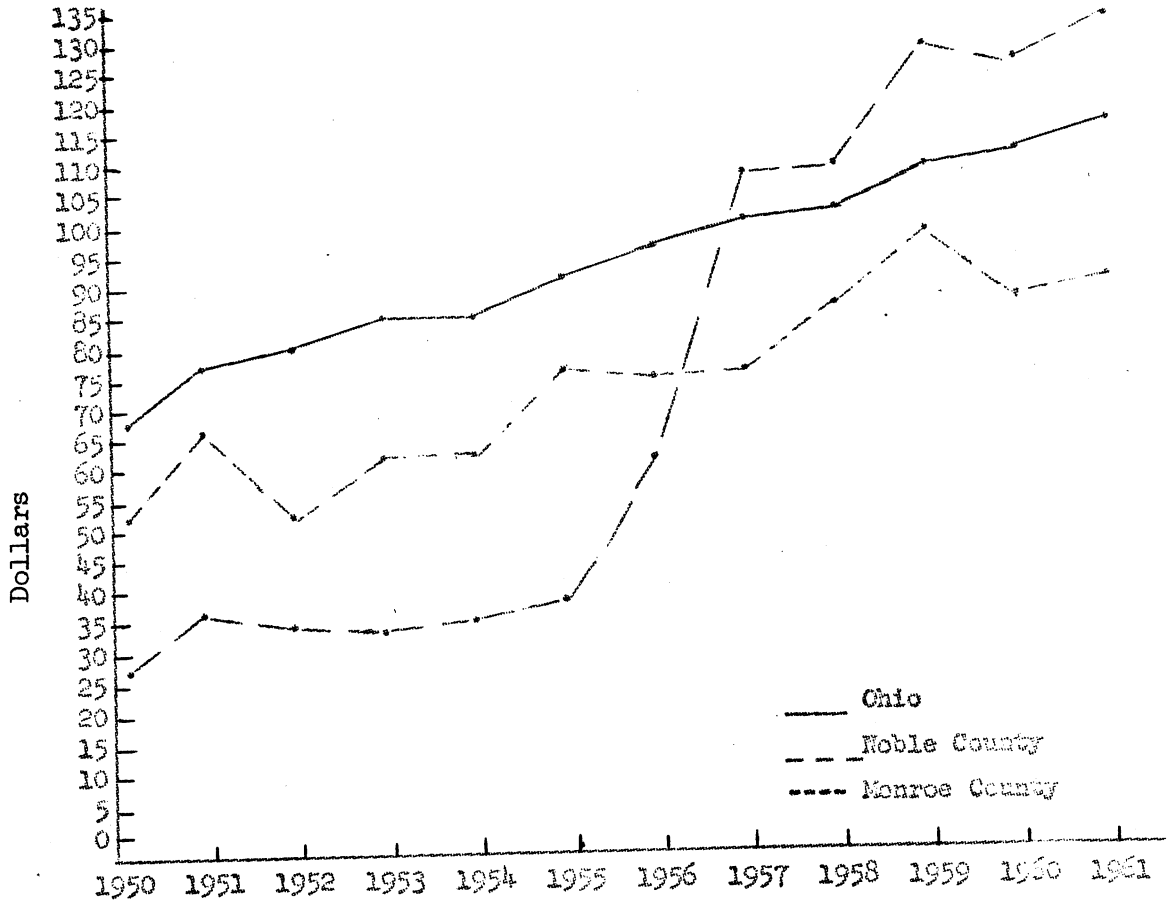


Figure 9. Average weekly earnings in manufacturing, 1950-1961.

Source: Ohio Labor Market Information
Ohio Bureau of Unemployment Compensation, RS 203-56, RS 203-61.

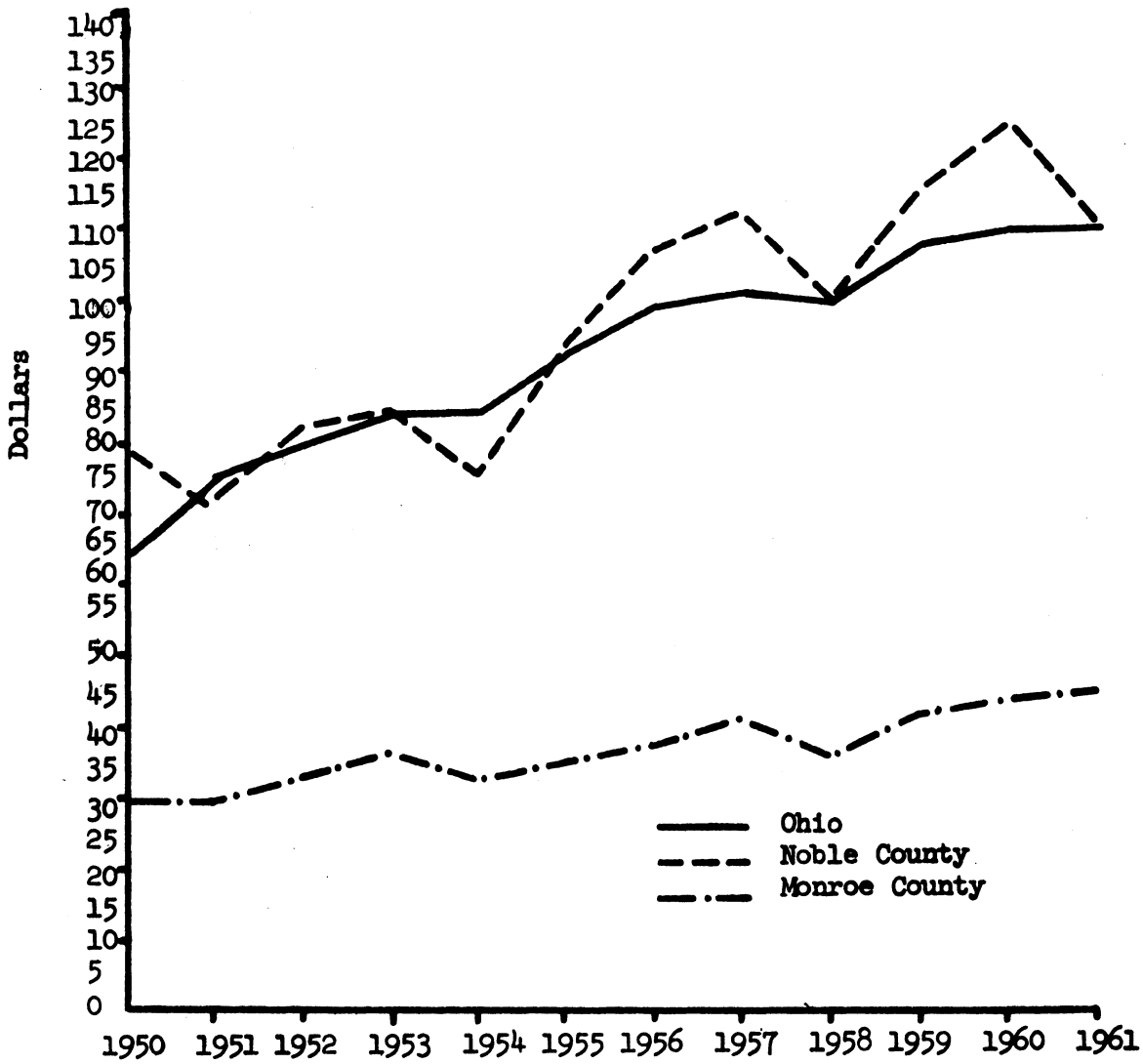


Figure 10. Average weekly earnings in mining and quarrying.

Source: Ohio Labor Market Information
Ohio Bureau of Unemployment Compensation, RS 203-56, RS 203-61.

started in 1960. Receipts declined more rapidly in Monroe than in Noble County in the period 1957 to 1960 and failed to increase as much in 1961. Thus, although the reduction of labor and land in agriculture was similar in both counties, the greater reduction in sales of agricultural products in Monroe during the period immediately following the expansion of nonfarm job opportunities suggests that some resources were probably drawn out of agriculture (Figure 11).

Trends in average total cash receipts per acre show that returns per acre held somewhat higher in Monroe than in Noble during the period 1954 to 1961, indicating that, in spite of a trend toward extensive operation, farm production remained more intensive in Monroe than in Noble during the period of industrial expansion (Figure 12). Information from sample farmers indicates, however, that gross income per farm declined in Monroe and increased in Noble County during the study period.

Retail Sales

Although a substantial portion of the increase in payroll went to nonresidents, it is likely that some of it was spent in Monroe County. For an indication of trends in retail sales, data from the Census of Business and Retail Trade for 1949, 1954, and 1958 and Ohio State University Bureau of Business Research estimates of retail sales in 1960 and 1961 were used (Table 31). Between 1948 and 1954, retail sales in Monroe increased but more slowly than retail sales in Noble County or in Ohio. In the period 1954 to 1958, which includes most of the construction period, the situation was reversed. For example, the increase in sales in Monroe was $3.1 million or 43 percent of the 1954 total, compared with less than $1 million or 11 percent of the 1954 total in Noble. This relationship continued between 1958 and 1960. Although sales declined in both counties in 1961, the decline was less in Monroe than in Noble. We can infer from these data that the expansion of payrolls in construction and manufacturing in Monroe County had a substantial and fairly lasting effect on the volume of retail sales. Obviously, it had a smaller effect than it might have had if more of the increased payroll had been paid to Monroe County residents.

Governmental Revenues and Expenditures of Public Funds

Government revenues and expenditures of public funds are both measures of the economic well-being of the population of a county. Revenue collections reflect income and material levels of living of the taxpaying public and expenditures of public funds, particularly for welfare, are a measure of the economic burden of dependent populations. What effect does the addition of a major industrial plant have on these two items? Data on appraised value of real estate, public utilities, and tangible personal property indicate changes in property values or the tax base. Tax collections from various sources provide fairly direct measures of changes in material level of living and various public expenditures for welfare provide a measure of the program for care of dependent persons.

Appraised Value of Property

Total appraised value of taxable properties was nearly $3 million higher in

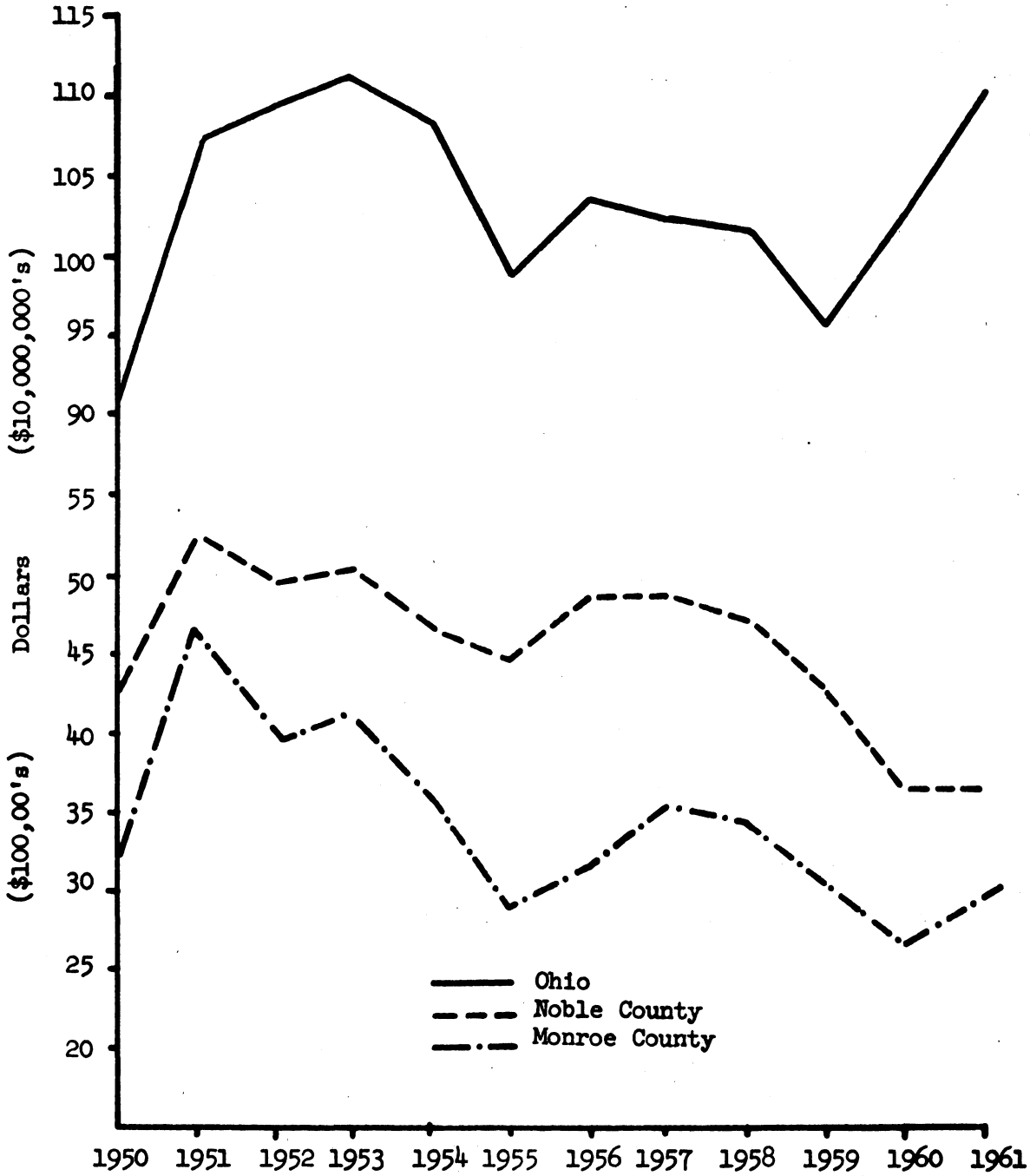


Figure 11. Estimated cash receipts from the sale of agricultural products and government payments in Monroe and Noble counties and Ohio 1950-1961.

Source: Statistical Abstract of Ohio (1960), p. 122, Table I-17.

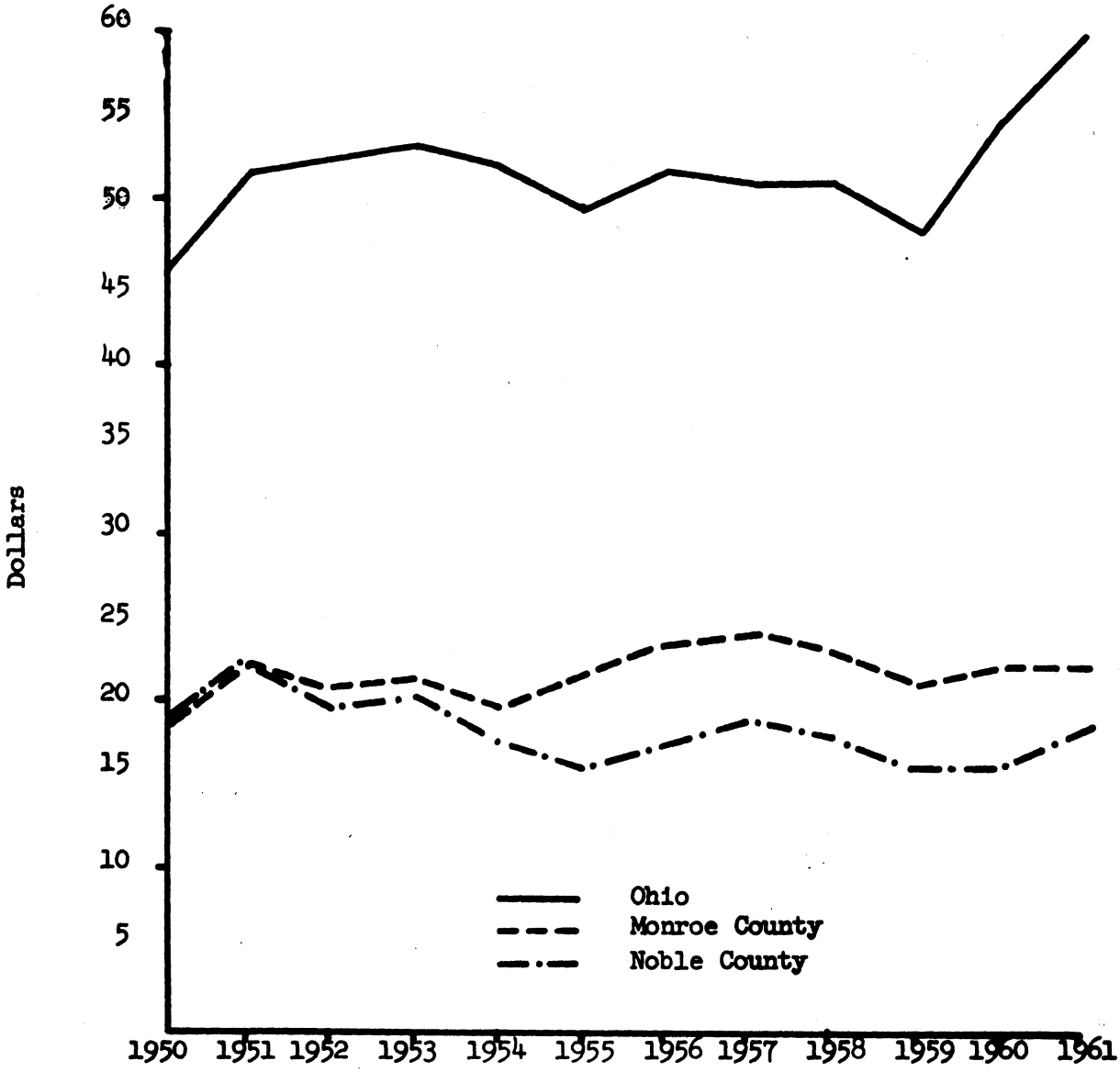


Figure 12. Total cash receipts per acre from the sale of farm products and from government payments, Monroe and Noble counties and Ohio, 1950-1961.

Source: Statistical Abstract of Ohio (1960), p. 123, Table I-18.

Table 31. Total sales in retail trade for Monroe and Noble and Ohio for specified years.

Year	Monroe	Noble	State of Ohio
	(Dollars in Thousands)		
1948	6,150	5,133	7,373,173
1954	7,515	8,357	9,633,332
1958	10,601	9,253	10,857,305
1960*	12,200	10,400	12,479,900
1961*	11,300	9,300	11,684,300

*Estimates for 1960 and 1961 total sales were obtained from Bulletin of Business Research, February 1962, of the Ohio State University Bureau of Business Research.

Source: Statistical Abstract - Ohio 1960, Table Q-7.

Statistical Abstract Source: (1948) U.S. Department of Commerce, Bureau of the Census, U.S. Census of Business: 1948, Retail Trade, Area Statistics, (1954 & 1958) U.S. Department of Commerce, Bureau of the Census, U.S. Census of Business: 1958, Retail Trade, Ohio, BC 58-RA35. Government Printing Office, Washington, D.C., 1960.

Monroe than in Noble in 1950. During the next 4 years, appraised values rose rapidly in Noble and remained relatively stable in Monroe. Consequently, values were higher in Noble by 1954 (Figure 13). During the next 4 years, 1955 to 1958, the trends were reversed, with values rising more rapidly in Monroe.

The major impact of the new industrial plants occurred in the years 1959 and 1960. Values in Monroe County rose from $25.3 million in 1958 to $85.2 million in 1959 and $124.8 million in 1960. In the meantime, Noble County values continued to increase gradually at a rate comparable to the rate of increase for the state generally. The rapid increase in tax base for Monroe County in 1959 and 1960 must have had a major impact on local revenues.

Because the new plants were located in the open country outside of any incorporated village, the increase in appraised values was greater in these areas than in the villages. There were substantial increases in real estate values in incorporated places, however, reflecting primarily the growth of new housing developments.

The patterns of change from year to year illustrate the differential effect of industrial development on open country vs. village property values in Monroe

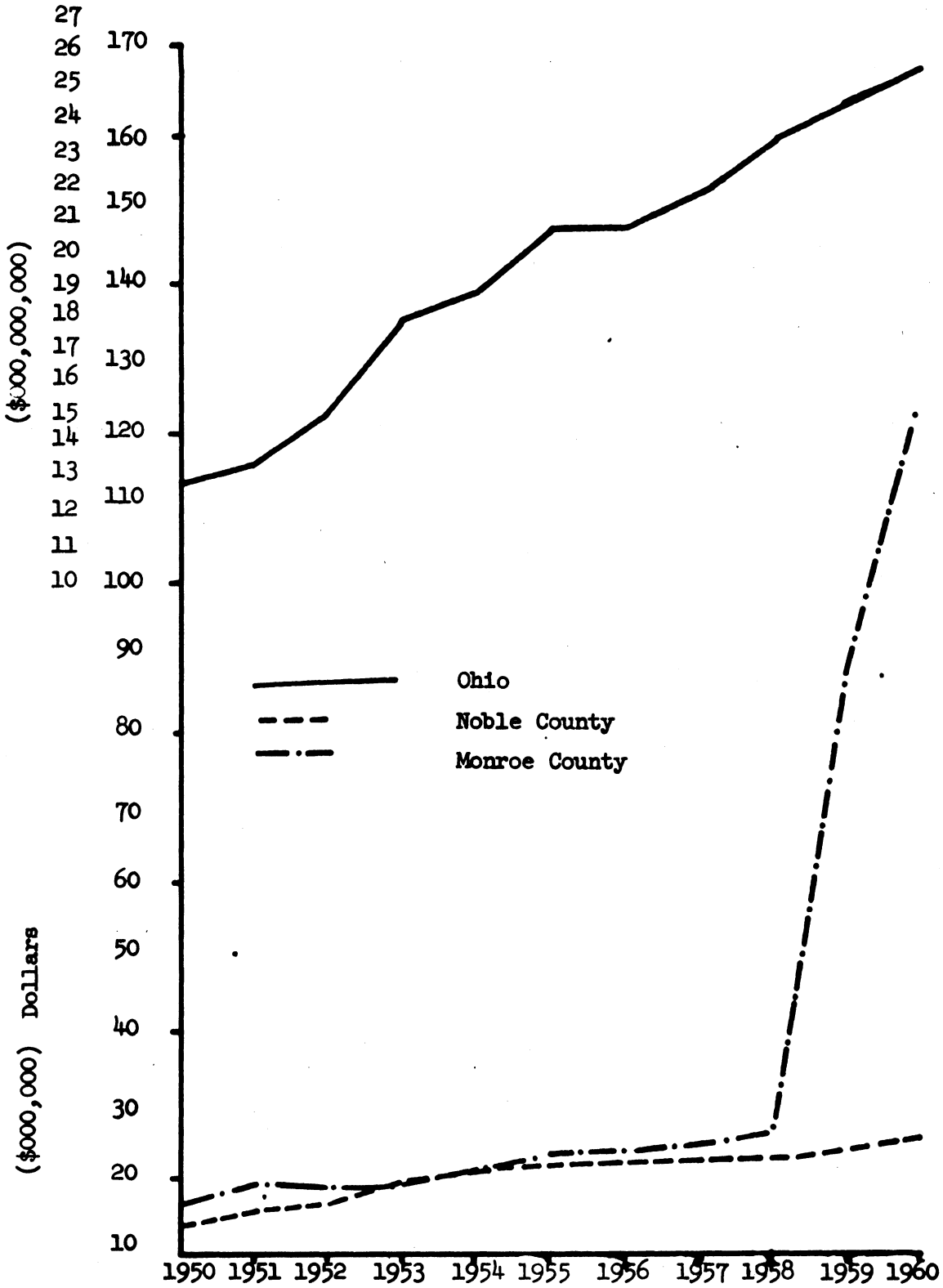


Figure 13. Total appraised value of real estate, public utilities, and tangible personal property.

Source: Statistical Abstract of Ohio (1960), p. 135, Table J-13.

County. Real estate values both in villages and outside of villages were very stable between 1950 and 1956. Incorporated village values rose from about $8.5 million in 1956 to $9.6 million in 1957, remained steady for 2 years, and then skyrocketed to $31.0 million in 1960 (Figure 14). In contrast, values in incorporated villages increased very gradually from $3.0 million in 1956 to $3.2 million in 1958 and then rose sharply to $4.9 million in 1959. The total value of real estate outside of incorporated villages was about three times that of real estate in incorporated villages during the period 1950-1959 and in 1960 it was six times greater. Furthermore, most of the increase outside incorporated villages occurred in the eastern half of the county where the plants were located.

Tax Collection

Tax collections on tangible personal property increased thirtyfold (from $30,500 to $927,300) between 1950 and 1960 in Monroe, while they only doubled in Noble County (from $52,900 to $122,400). Until 1956, the rate of increase was similar in both counties, with Monroe County collections increasing from $30,568 in 1950 to $49,625 in 1956 and Noble County collections increasing from $52,913 to $88,641 for the same period (Figure 15). Monroe County collections doubled each year in 1957 and 1958 and then increased more than fourfold in 1959, while Noble County collections increased relatively little.

WELFARE

In areas of depressed economic conditions, the administration of various welfare programs affects a substantial segment of the population. The trend in total payments for public assistance in Monroe County was up for the period 1954 to 1961, just as it was in Noble County and the state of Ohio as a whole. The major difference between the counties was not in the trends but in amount of payments. Totals in Monroe were considerably higher than in Noble, both in terms of absolute and per capita amounts.

Although the general trend was up in both counties, there were year-to-year variations which reflect the influence of industrial activity levels. The largest increase in Monroe occurred between 1956 and 1957 when payments increased from $614,768 to $674,994 and again between 1959 and 1961 when they increased from $673,547 to $822,087. The first increase occurred during the early part of the construction activity in Monroe County and was apparently a response to the needs generated by family and job dislocations associated with a large influx of construction workers. Assistance payments leveled off at a relatively high level during the major construction period and then increased considerably as the layoffs occurred at the end of the construction period 1959-60 (Figure 16).

Sample data on employment histories indicate that only a small part of the construction labor was absorbed into the payrolls of the new plants as production began. Thus, the period immediately following the completion of major construction activities was a period of unemployment or job dislocation for many. The decline of payments in 1962 indicates that some readjustment had been accomplished by then. It is likely that out-migration of many of the construction workers who had moved into the county when construction began was a major factor in this readjustment.

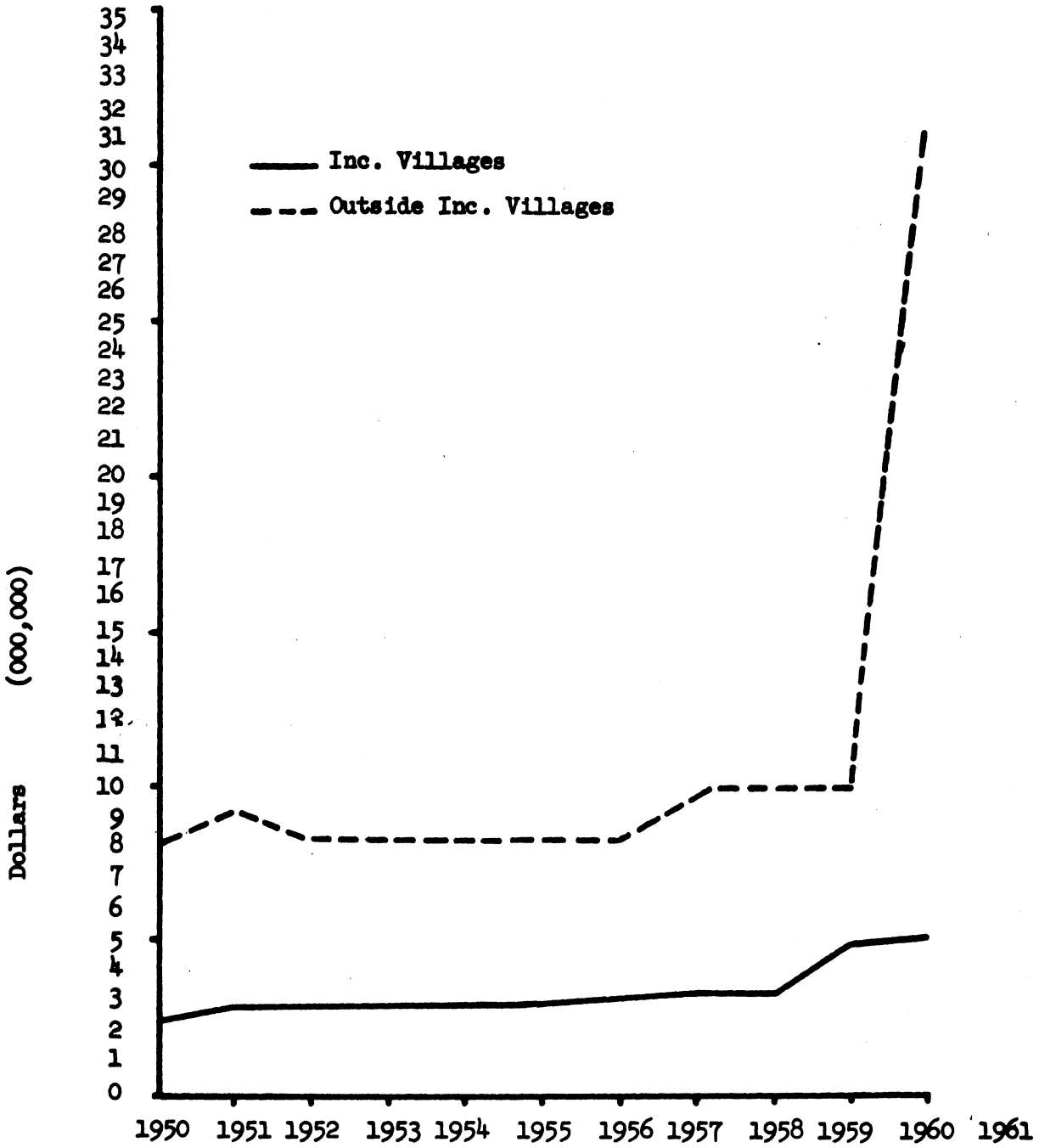


Figure 14. Value of real estate in incorporated villages and outside of incorporated villages, 1950 to 1960, Monroe County.

Source: Statistical Abstract of Ohio (1960), p. 135, Table J-13

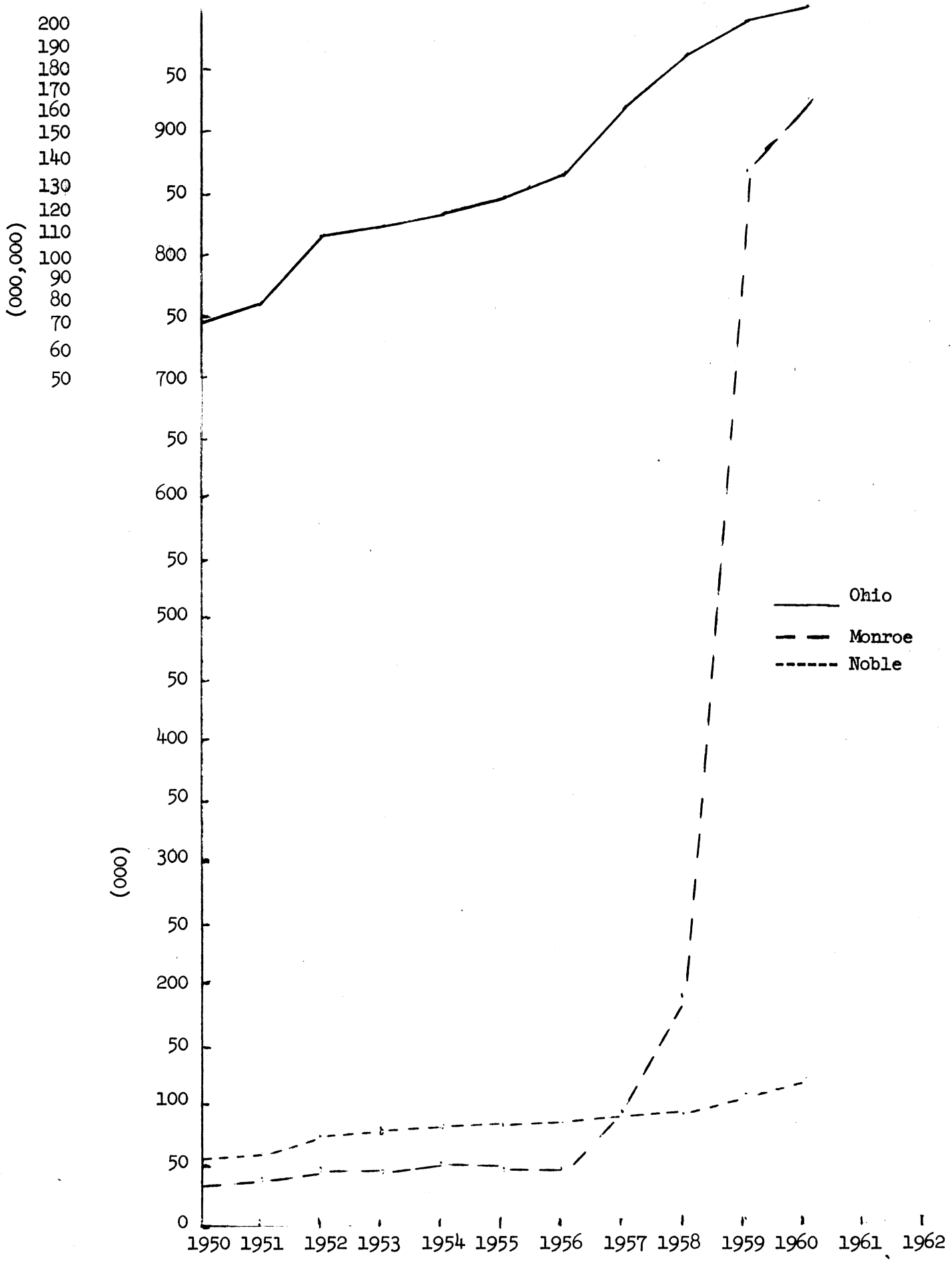


Figure 15. Tangible personal property tax collections, total collected.

Source: Statistical Abstract of Ohio (1960), p. 136, Table J-13.

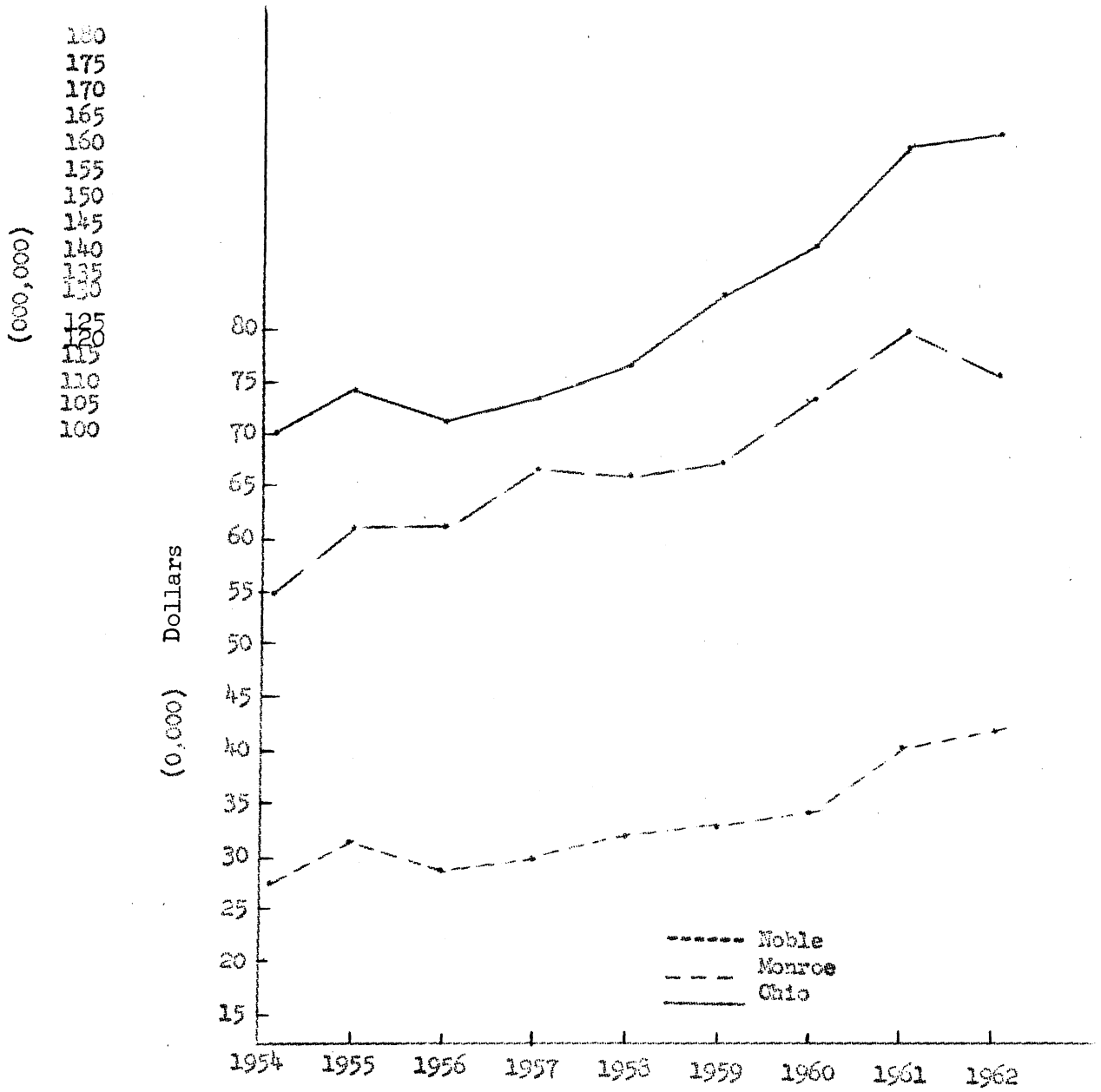


Figure 16. Total public assistance payments in Monroe and Noble counties and Ohio 1954-1962

Source: Statistical Abstract of Ohio (1960), p. 105, Table H-15.

Public assistance funds may be broken down into several segments. These include aid to the aged, aid to dependent children and general relief payments. Analysis of trends in each of these throw further light on welfare trends.

Aid to the Aged

Since the extension in the early 1950's of OASI coverage to most categories of workers not previously covered, aid to the aged payments from state and federal funds have tended to remain rather stable in amount or have declined. Total annual payments from state and federal funds for the state of Ohio show an upward trend during the period 1950-62. Since population increased more rapidly than payments, per capita payments decreased. The trend in total annual payments in Noble during the decade was also up but, because population was decreasing in Noble, per capita payments also increased during the decade. The trend of payments in Monroe County was quite different. Payments increased during the first 7 years of the decade at a more rapid rate than payments in Noble but then decreased between 1957 and 1962. Noble County payments continued to increase until 1961 (Figure 17).

The earlier decline in payments in Monroe came during the period of expansion of employment opportunities. Since according to sample data the proportion of aged persons (60 and older) increased in Monroe County between 1957 and 1962 (from 19.6 to 22.5 percent) while it decreased in Noble County (from 17.8 to 16.9 percent), the fact that total aid payments decreased in Monroe and continued to increase in Noble until 1961 suggests that public dependency among the aged in Monroe was reduced substantially by the improvement in economic conditions associated with expansion in manufacturing.

Aid to Dependent Children

Direct payments for aid to dependent children have increased at an accelerating rate in recent years. Total payments in Ohio increased at the rate of $2 million per year between 1950 and 1958 and at the rate of about $6 million per year from 1958 to 1962. Payments in Noble followed the state trend. However, in comparison to Noble, Monroe County payments started higher, increased more rapidly in the earlier part of the period, and turned down at the end of the period (Figure 18). The year-to-year fluctuations in Monroe appear to reflect changes in employment. During the period 1957-59, the upward trend was halted. This was the period of high employment in construction. Although they rose rapidly in 1960 and 1961, 1962 payments were down again, suggesting the possibility that the effect of employment in the new plants may have had some influence on payments.

Distribution of Poor Relief

Amounts of poor relief distributed annually from state and federal funds in Ohio followed an upward trend from 1950 to 1960 and then declined rather sharply in 1961 (Figure 19). Both counties followed trends similar to the state trend but the individual county fluctuations appear to correspond with variations in the local employment situation. Prior to 1957, Monroe County trends followed the

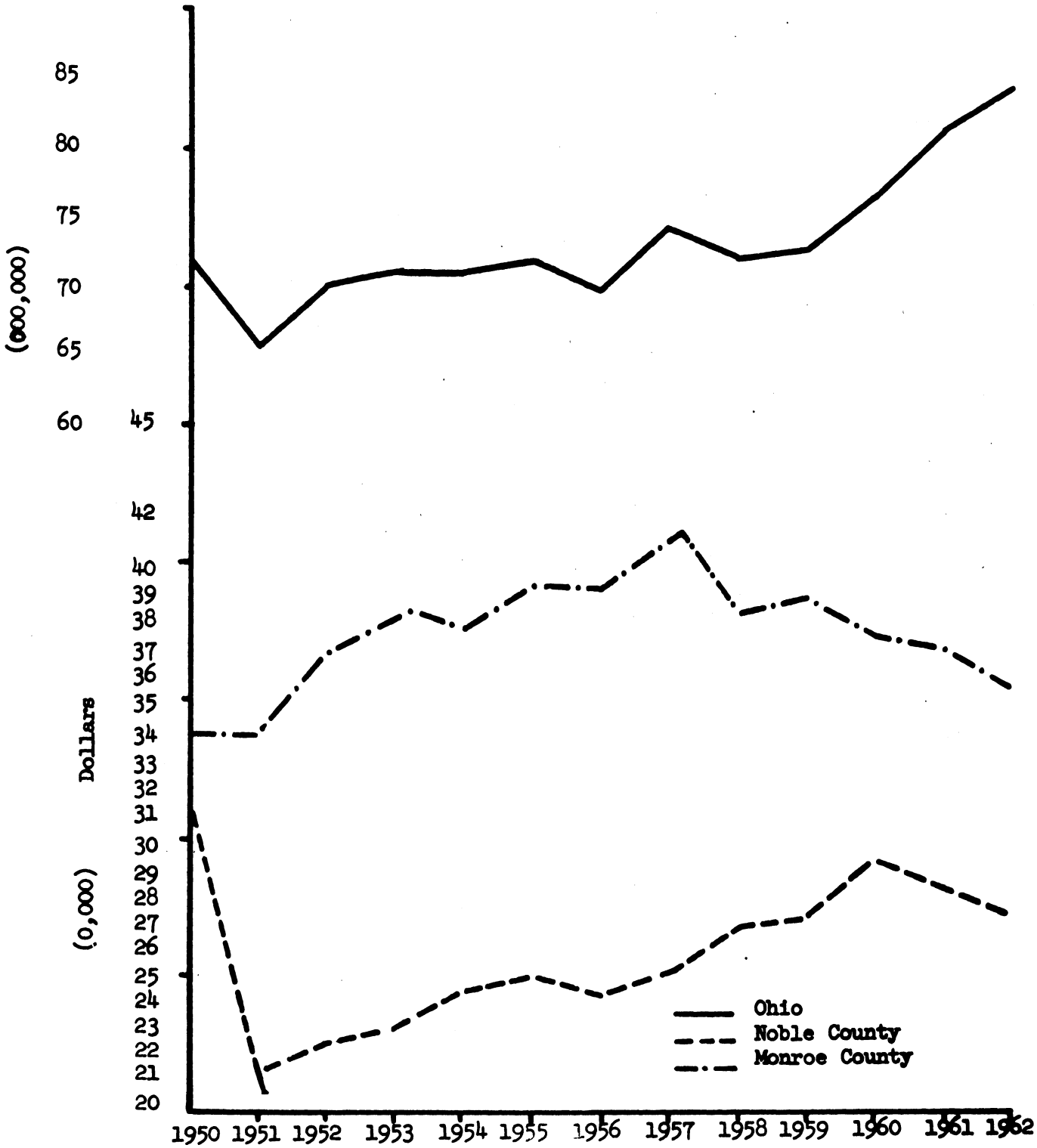


Figure 17. Distribution of aid to the aged payments from state and federal funds in Monroe and Noble Counties and Ohio, 1950-1962.

Source: Statistical Abstract of Ohio (1960), p. 194, Table H-2.

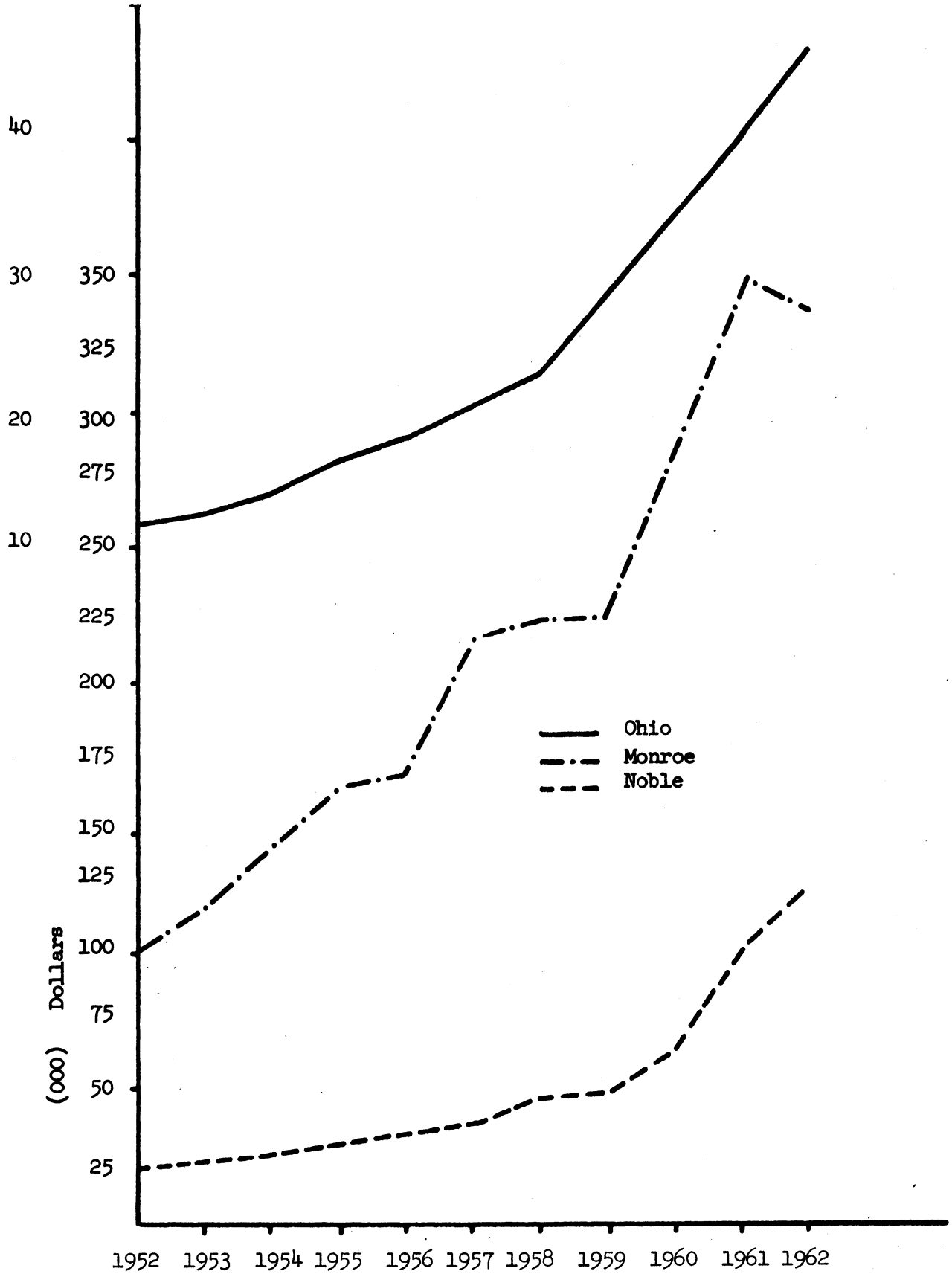
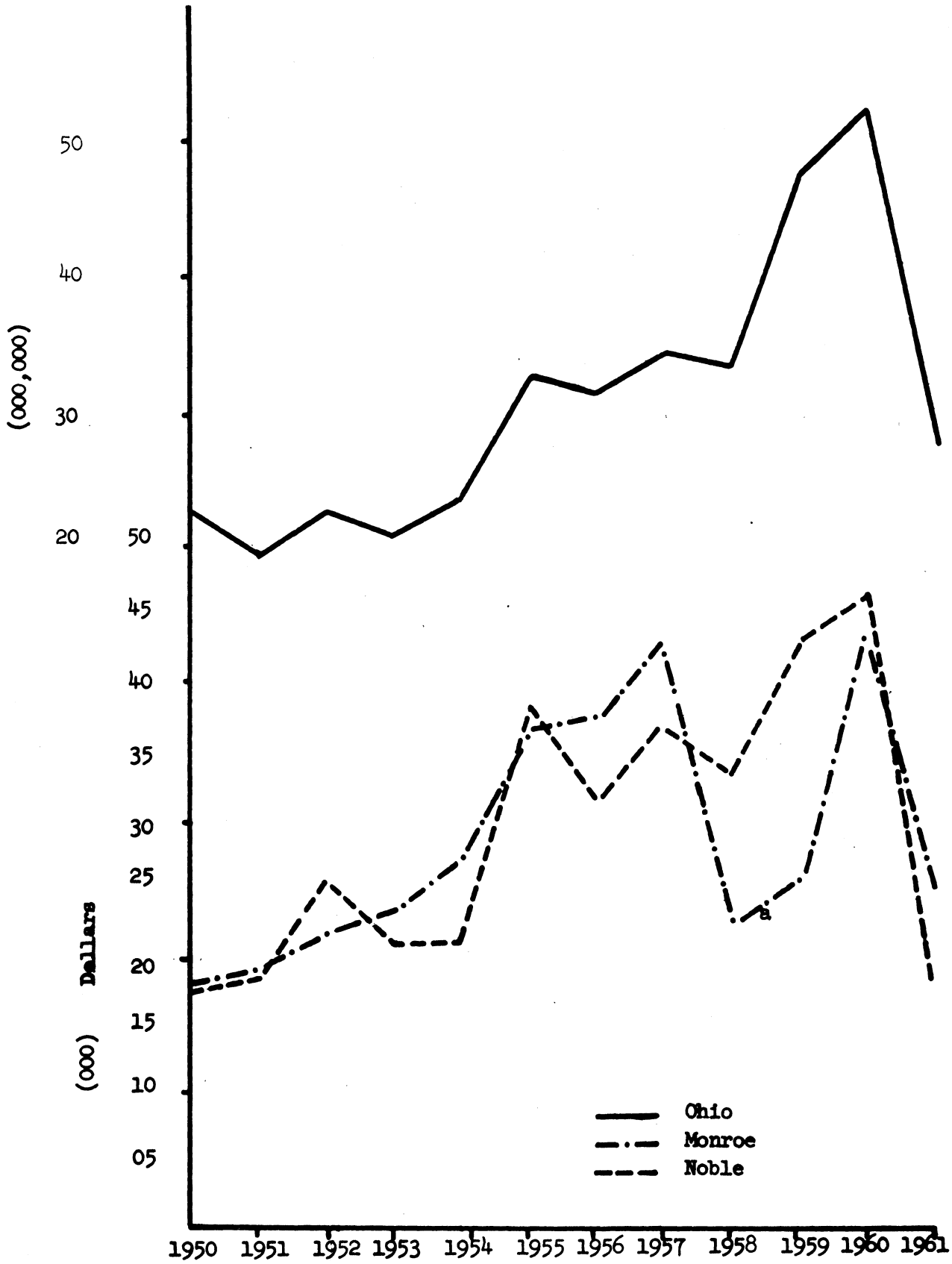


Figure 18. Aid to dependent children (direct payments) in Monroe and Noble counties and Ohio, 1952-1962

Source: Statistical Abstract of Ohio (1960), p. 95, Table H-3



a/ State funds only.

Figure 19. Distribution of poor relief from federal and state funds, Monroe and Noble counties and Ohio, 1950 to 1961.

Source: Annual Report, Auditor of State.

upward trend in the state but in 1958 payments for poor relief fell substantially and remained low in 1959 before going back up to the 1957 peak in 1960. Although payments declined slightly in 1958 in Noble County, they continued their upward trend until 1961, when payments fell in the state as a whole. The downward turn in 1958 for Noble would appear to be only a part of the normal year-to-year fluctuation in the steady upward trend from 1950 to 1960. On the other hand, the 2-year dip in payments in Monroe was too large to be considered a normal fluctuation. The inference is that improved employment conditions in Monroe were a causal factor in producing this decline. The return to the 1957 peak in 1960 could be related to the greater incidence of welfare problems associated with the switch from construction to production activities at that time.

Since these figures represent the totals at the end of each fiscal year, there is a half-year lag to be considered in comparing relief payments with employment figures. Considering the half-year lag, poor relief payments in Monroe went down during the peak of construction employment, up during the transition from construction to production, and then down again. This leaves unexplained, however, the substantial decrease in payments in Noble County in 1961.

LEVEL OF LIVING

Information obtained in the two sample surveys provides additional evidence of the effect of the industrial development in Monroe County on the welfare of the population. Included are data on condition of the home, possession or availability of certain household conveniences, ownership of autos and trucks, and subscriptions to magazines and newspapers. In addition, for those households with a member employed during 1962 at one of the new plants, information was obtained on the increment to family incomes which the new job produced and on the uses made of the added income.

Condition of the Home and Household Conveniences

Responses to a series of questions regarding the condition of the home and possession or availability for use of 10 different household conveniences were obtained in both surveys. These provide a measure of change over the 5-year period. The percentages of houses in excellent, fair, or run-down condition and the percentages of households reporting each of the 10 conveniences are presented in Table 32.

Estimates of the over-all condition of the house indicate improvement in both counties in the period 1957-62. The proportion of houses in excellent condition increased more in Noble than in Monroe, the opposite of what was expected. Possession of various conveniences in the home, however, increased more in Monroe than in Noble. The proportion owning or having the use of conveniences increased in Monroe in all categories, compared with only 6 of the 10 categories in Noble. Responses to questions about freezers indicate that home freezers are replacing freezer lockers in town in these two counties. In 1957, 5 percent in Monroe and 12 percent in Noble reported lockers in town. By 1962, less than 1 percent in each county had lockers in town. The responses for these two items were therefore combined.

Table 32. Percent of household heads living in houses classed as in excellent condition and owning or having the use of 10 specified household conveniences.

	Monroe		Noble	
	1957	1962	1957	1962
Condition of House				
Excellent	40.8	54.1	28.6	53.4
Fair	46.8	37.1	63.2	38.8
Run-down	9.4	8.3	6.3	6.7
No answer	3.0	0.5	1.8	1.1
Conveniences Owned or Used				
Electric lights	96.4	98.1	99.1	98.9
Refrigerator	92.4	97.1	92.9	97.8
Radio	92.9	93.0	98.2	94.8
Washing machine	88.8	91.5	97.3	95.1
T. V.	71.3	88.9	66.1	82.5
Telephone	71.0	84.4	66.1	69.8
Hot and cold water	51.7	67.9	49.1	67.9
Central Heating	40.4	47.3	39.3	50.7
Home freezer or locker in town	31.3	41.0	58.9	46.6
Clothes dryer	12.4	34.7	6.2	30.2

Autos and Trucks

According to sample data, the number of autos and trucks per household increased at about the same rate in both counties (Table 33). However, according to motor vehicle registrations which are available on a yearly basis, there was a substantial increase in 1957 and 1958, the period of construction on the plants, and declines in 1959 and 1960 when construction work was completed (Table 34).

Table 33. Ownership of autos and trucks in Monroe County and Noble County, 1957 and 1962.

	Monroe		Noble	
	1957	1962	1957	1962
Percent with one or more autos	78.9	83.7	78.9	85.4
Median number of autos per household	1.39	1.41	1.40	1.41
Percent with one or more trucks	20.3	22.8	21.4	28.7
Median number of trucks per household	0.61	0.65	0.64	0.70

Table 34. Motor vehicles registered in Monroe and Noble County, 1950-1960.

Year	Monroe County	Noble County
1950	5162	4456
1951	5129	4429
1952	5062	4479
1953	5157	4518
1954	5180	4480
1955	5439	4609
1956	5697	4783
1957	6690	4918
1958	7473	4917
1959	7046	5017
1960	6861	5199

Source: Statistical Abstract of Ohio, 1960, Table R-9.

A summary measure--computed by assigning one point for possession of each of the 10 items in Table 32 plus one point if the house was constructed of brick or painted frame, one point if the room to person ratio was at least one room per person, one point for owning an auto, one for subscribing to at least one magazine, and one for subscribing to a daily newspaper--indicated more improvement in the level of living in Monroe than in Noble for the period 1957-62. The index remained higher in Noble, however, and the difference between counties in the amount of improvement was too small to be considered very significant (Table 35).

Table 35. Mean level of living scores of households in Monroe and Noble counties in 1957 and 1962.

County	Year		Difference in mean scores 1957 to 1962
	1957	1962	
Monroe	10.39	11.42	+1.03
Noble	10.75	11.53	+0.78
Difference	0.36	0.11	0.25

FAMILY INCOME

Family income rose generally during the decade 1950 to 1960. Although Monroe and Noble counties participated in this general rise in income, median family incomes for both counties were considerably below the state medians in both census years (Table 36). Median income in Monroe County was lower than in Noble County in 1950 but increased more during the decade and exceeded the Noble County median in 1960. According to sample data for 1962, the increase in income continued between 1960 and 1962. Income data were not obtained in the 1957 survey so comparison of 1957 and 1962 was not possible. Median incomes for sample households in 1962 were higher in Monroe County than in Noble County ($3,601 compared with $3,500).

Table 36. Median income for families and unrelated individuals in Monroe County and Noble County, 1950, 1960 and in Ohio, 1950 and 1960.

Year	Monroe	Noble	Ohio
1950	$ 1,207	$ 1,597	$ 3,027
1960	3,360	3,200	5,442

Source: U.S. Census of Population, 1950 and 1960.

Increments to Family Income from Factory Job

When asked if the new job at the plant had increased their family income more than what it would have been if they had not taken the new job, two-thirds of the households with a member employed at one of the new factories said yes. Thirty percent said there had been no change and 3 percent said their incomes had actually decreased. The median increase for those reporting an increase was $2,000.

The new factory jobs boosted family incomes for this group of families to a level considerably above the levels of other families. Family incomes of households with a plant worker averaged $6,980, compared with $3,170 for all other households. Even when the households of retired workers and households in which the head was unable to work or was unemployed were omitted from the comparison, the advantage in income for plant households was substantial.

Use of Additional Income

Responses to questions about the use of the added income indicate a wide variety of uses. No attempt was made to get estimates of the amounts used for each purpose but proportions of households using at least some of the added income for specific purposes provide an indication of the effect of the added income on the general pattern of expenditure. A new or different auto, new appliances, new furniture, and a new or different home, in that order, ranked highest among uses of added income (Table 37). Mentioned less frequently but by a majority of households were savings, life insurance, and home redecoration. Specific questions were asked about expenditures for seven different items. Remodeling of the house was the only one that was not mentioned by a majority of the respondents.

Table 37. Number of households using added income from new factory jobs for specific purposes.

	Yes	No	Total with increased income
Purchase new or different home	31	13	44
Purchase new or different car	37	7	44
Purchase new appliances	34	10	44
Increase savings & life insurance	28	16	44
Purchase new furniture	30	14	44
Remodel home	19	25	44
Redecorate home	23	21	44

CHANGES IN FARM PRACTICES, COMMUNICATION FACILITIES, AND INFORMATION SOURCES

The discussion so far has been concerned with changes in population, employment, and level of living. Although a major increase in local employment opportunity is felt first in these elements, changes in one important sector of a social system tend to cause changes in other sectors in a chain-reaction manner. Other sectors where change may occur are agricultural technology, communication systems, social participation, leisure time activities, and attitudes. Because agriculture has been and remains an important industry, changes in agricultural technology are considered first.

We have already noted that there was some shift in major enterprise organization in the county, with beef cattle replacing dairying as the number one enterprise. A decline in poultry production and an increase in forestry are other signs of a shift to a more labor extensive organization of agricultural resources.

Level of Mechanization and Agricultural Technology

The only measure of mechanization obtained was the number of tractors used on farms. Mechanization increased in both counties but not significantly more in Monroe than in Noble County (Table 38). Noble County was somewhat more mechanized than Monroe County in 1957, with tractors used on 69 percent of its farms compared with 64 percent for Monroe. Larger percentages of farms in Noble County had two or more tractors. Although the percentage of farms with tractors increased more in Monroe than in Noble, the proportion remained higher in Noble in 1962.

Horses were still being used as a source of draft power on 47.8 percent of the Monroe County farms and 41 percent of the Noble County farms in 1957. By 1962, these proportions had dropped to 31.6 in Monroe and 11.0 percent in Noble, suggesting that this aspect of mechanization advanced more rapidly in the Noble County area.

To obtain a measure of changes in other aspects of agricultural technology, questions were asked in both surveys about the use of certain farm practices recommended by agricultural extension agents in 1957. This list was compiled in consultation with extension farm management experts and reviewed for applicability to the local situation by the agricultural extension agents in the counties. It provides a measure of the state of agricultural technology and a measure of trends in levels of innovation and adoption of new practices.

The list of 24 practices is presented in Table 39. They are organized according to the type of farm enterprise to which they apply. Since farmers did not all have the same major enterprises, some practices were not applicable to all farmers. To avoid dis or ion, percentages are based on the total number of farms with a particular enterprise. Because of administrative restrictions, Noble County data were obtained for only half of the practices in the first survey. Although a longitudinal comparison could not be made for these 12 items, the 1962 data for all 24 items are presented in order to provide an intercounty comparison of the state of farm technology in the two counties in 1962.

Table 38. Number and percent of Farm Operators who operated from none to four tractors on their farms, Monroe and Noble Counties, 1957 and 1962.

Number of Tractors Per Farm	Farm Operators							
	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
None	57	36.1	38	25.3	33	30.8	15	19.5
One	84	53.1	81	54.0	57	53.3	41	53.2
Two	15	9.5	24	16.0	13	12.1	15	19.5
Three	2	1.3	1	.7	4	3.8	4	5.2
Four			2	1.3			2	2.6
No Answer			4	2.7				
TOTAL	158	100.0	150	100.0	112	100.0	77	100.0

Although gross in nature, the number of practices used serves as a measure of the relative state of technological advance in the two counties. On this basis, Monroe County had the most advanced state of agricultural technology in 1962. For 17 of the 24 items, the proportion of farms using the practice was larger in Monroe than in Noble.

The assumption made at the beginning of the study that the use of recommended practices would increase in both counties was incorrect. Of the 12 practices included in both surveys, the proportion of users declined for 11 practices in Monroe and for 9 practices in Noble. For the other 12 practices included only in the Monroe County surveys, the use of 8 decreased. Thus, the use of 19 of 24 recommended farm practices declined during the study period in Monroe County.

Since the list was developed in 1957, one explanation of the almost universal decline in use of these practices would be that recommendations had changed in the 5-year period. Checking with the agricultural extension service revealed that this was not the case. The only change was a change in the recommendation regarding phosphate fertilizer. In 1962, its use as a part of a combination fertilizer was being recommended in place of the earlier recommendation for rock phosphate.

Change in enterprise emphasis does not offer much more hope of an adequate explanation. A decline in the proportion of farmers using recommended poultry practices is logical, considering the decline in the importance of the poultry enterprise. The same logic would explain at least part of the decline in the use of dairy practices but it would not explain the declines in forestry practices, since forestry increased in importance. Neither would it explain the

Table 39. Percentage of farmers using applicable farm practices in Monroe and Noble counties, 1957 and 1962.

	Monroe County		Noble County	
	1957 %	1962 %	1957 %	1962 %
Dairying:				
Sample milk testing	32.8	22.2	29.0	19.4
Use milking machine	36.0	50.0	14.0	44.4
Use artifical breeding	33.6	32.7	30.8	50.0
Produce fluid milk for Grade A market	26.5	29.2	----	36.1
Have bulk milk tank	4.3	4.2	----	11.1
Test cows for brucellosis or for tuberculosis	96.7	87.4	----	67.1
Poultry:				
Buy sexed chicks	51.5	35.4	31.8	9.5
Cull hens to eliminate poor layers	36.6	25.0	----	11.9
Hogs:				
Raise meat type hogs in order to qualify for the premium price	27.1	42.0	----	57.9
Use self-feeders for hogs	21.2	15.4	----	21.1
Forestry:				
Do annual cutting in farm forest	10.6	9.7	8.4	5.8
Have farm forest fenced and protected from livestock	33.3	32.4	18.7	21.4
Disease:				
Feed antibiotics to livestock or poultry	22.6	23.4	----	15.1
Agronomy:				
Make grass silage	6.3	1.6	2.8	0.0
Sow legume-grass mixture for pasture	34.4	19.9	29.9	17.1
Spray for control of spittle bug	32.7	9.4	18.7	9.2
Had soil tested	64.0	42.8	42.1	37.3
Do strip cropping	59.1	46.2	----	34.7
Clip permanent pasture	64.2	52.1	76.6	51.3
Spray weeds in corn	48.0	43.0	----	53.2
Use phosphate fertilizer	94.2	75.5	----	73.7
Use lime	84.4	64.6	----	64.5
Do contour planting	45.0	46.2	----	34.7
Do band seeding with a drill (for grass and legume seed)	30.9	19.6	----	20.8

decline in pasture and forage crop practices which could be part of a beef enterprise, which increased in importance, or part of a dairy enterprise, which decreased in importance.

This leaves the possibility that the declining importance of agriculture in both counties was the principal causal factor. Since part-time farming increased during the study period, the data were retabulated for the full-time farmers who were interviewed in both surveys to determine whether the decline in the use of recommended practices occurred among full-time farmers (Table 40). Full-time farmers were defined as those receiving 80 percent or more of their family income from farming.

Table 40. Percent change in the use of twelve recommended farm practices by all farmers interviewed and by the same full-time farmers interviewed in both studies.

Farm Practices	Monroe County				Noble County			
	All Farmers		Full-Time Farmers		All Farmers		Full-Time Farmers	
	1957 %	1962 %	1957 %	1962 %	1957 %	1962 %	1957 %	1962 %
Do sample Milk Testing	32.8	22.2	28.9	17.1	29.0	19.4	34.5	20.0
Using Milking Machine	36.0	50.0	43.1	46.3	14.0	44.4	20.7	50.0
Use Artificial Breeding	33.6	32.7	31.0	31.7	30.8	50.0	41.4	55.0
Buy Sexed Chicks	51.5	35.4	50.0	26.8	31.8	9.5	37.9	10.0
Annual Selective Cutting in Farm Forest	10.6	9.7	13.8	15.0	8.4	5.8	10.4	0.0
Farm Forest Fenced	33.3	32.4	27.6	29.3	18.7	21.4	27.6	25.0
Make Grass Silage	6.3	1.6	8.6	2.4	2.8	0.0	3.5	0.0
Sow Legume Pasture	34.4	19.9	39.7	34.2	29.9	17.1	34.5	20.0
Spray for Spittle Bug	32.7	9.4	37.9	14.6	18.7	9.2	20.7	15.0
Had Soil Tested	64.0	42.8	31.0	56.1	42.1	37.3	34.5	47.4
Do Strip Cropping	59.1	46.2	53.5	53.7	41.1	38.9	44.8	50.0
Clip pasture	64.2	52.1	70.7	75.6	76.6	51.3	79.3	50.0

Among full-time farmers in Monroe County, the use of 7 of 12 recommended practices increased, compared with increases in 1 of 12 among farmers generally. In Noble County, the use of 4 of 12 practices increased among full-time farmers,

compared with 3 of 12 among Noble County farmers generally. Thus, it is apparent that the general decline in the use of recommended practices was primarily caused by changes made by part-time farmers. This was especially true in Monroe County.

Furthermore, Monroe County full-time farmers made more advances in the use of recommended practices than Noble County full-time farmers. The greater increase in proportion of part-time farmers in Monroe accounts for the decline in the use of recommended practices among farmers generally. The fact that part-time farmers were less inclined to use recommended practices suggests that either the practices are less applicable or less feasible for the smaller operation of part-time farmers or that part-time farmers have less awareness of and interest in using the newer technology, or both.

The fact that the use of 5 of the 12 practices was reduced even among full-time farmers is further evidence of decline in the importance of agriculture.

Sources of Information

It was assumed that any action or event which widens the contacts of a relatively isolated population in one phase of life, such as occupational roles, will tend to widen contacts in other phases, such as sources of information. Although the emphasis in this section is on sources of information generally, sources of farm information are treated first because of their relationship to the preceding section.

Although not many farmers were affected directly by the expansion of industrial employment in Monroe County, it was expected that the general shifts in orientation and sources of information would involve farmers along with other citizens. Analysis of changes in farmers' sources of information must also account for the influence of a development which logically may have had greater impact for farmers' information than the industrial expansion. This was the rural development program and the role of the Extension Service in it. Coincident with the building of the new plants, a rural development program was launched in Monroe County. To assist with the program, a special rural development agent was added to the county extension staff. Thus, the farm people as well as nonfarm people were involved.

Assuming that broadened contacts in one phase of life would tend to encourage broader contacts in other phases, it was reasonable to expect that people would become more cosmopolitan in their contacts and their sources of information would become more specialized and impersonal. Since the broadening of occupational contacts through industrial expansion and the expanded extension and rural development programs occurred more or less simultaneously, their effects would combine to produce broader, more cosmopolitan communication patterns. Division of the effects of one from the other was impossible.

The effect on sources of farmers' information was expected to take the form of a shift away from reliance on the local informal and personal sources, such as relatives and neighbors, to more specialized sources, such as technical reports and farm technology specialists. Change in the percent of farmers mentioning particular information sources was considered the best available measure of inter-county differences in trends. By ranking the sources on a personal-local to technical-cosmopolitan continuum and noting differences in direction and amount

of change in percent of respondents mentioning the source, it was possible to set up a rough test for our hypothesis. In Table 41, the numbers at the left-hand side of the 1957 part of the table represent the authors' ranking of the different sources of information on the local-cosmopolitan continuum, beginning with number 1 as both the most local and personal and 10 as both the most technical and cosmopolitan. It was necessary to expand the ranking for the 1962 items to 0 through 11 because sources were mentioned in the follow-up study which were not mentioned in the benchmark study. Even though a county extension agent may develop a large number of strong personal relationships with local farmers, the agent remains an official representative of an outside agency source of highly technical information and was therefore placed near the cosmopolitan end of the continuum.

The sources were categorized and ordered as follows:

A. Local individuals
   1. Relatives
   2. Neighbors

B. Local commercial business
   3. Dealers

C. Local groups
   4. Farm organizations
   5. Co-ops

D. Local or near local mass media
   6. Newspapers
   7. Radio
   8. Television

E. Outside technical or specialized mass media
   9. Farm publications (magazines, journals, bulletins)

F. Outside agency specialists
   10. County agent
   11. Government agencies

The sources of farm information are ordered in Table 41 in terms of the proportion of farmers mentioning each source. The local-cosmopolitan rank position is in the left-hand column of each section. At the extreme right is a column of percentage points of change in frequency between 1957-62. Interpretation of the percentage points change column must take cognizance of the fact that two sources were mentioned in 1962 which were not mentioned in 1957. Thus, some decline in frequency for the 10 items common to both surveys could be expected without any other changes.

Considering both the changes in frequency rank and the percentage point change from 1957 to 1962, it appears that Noble County was more cosmopolitan in its sources of farm information to begin with and that, while Noble County shifted some toward the local end of the continuum, there was a small shift toward the cosmopolitan end in Monroe. Most of the latter was accounted for by an increase in the importance of the county agent as a source of information. Except for the decline in importance of T.V. and radio, which occurred in both counties, the shift toward the more specialized and cosmopolitan sources was more extensive

Table 41. Percent of farmers reporting various sources of farm information in Monroe and Noble Counties, for 1957 and 1962 and the ranking of these sources on a local-cosmopolitan continuum.

Monroe County

1957			1962			Percentage points change 1957-62
Local-Cosmopolitan rank a/	Sources	Pct. b/	Local-Cosmopolitan rank a/	Sources	Pct. b/	
6	Newspapers	39.9	10	County Agents	46.0	+16.1
9	Farm Publications	35.9	9	Farm Publications	33.3	- 2.7
7	Radio	31.7	2	Neighbors	16.7	- 7.2
10	County Agents	29.9	4	Farm Organizations	16.0	- 3.2
2	Neighbors	23.9	6	Newspapers	15.3	-14.6
4	Farm Organizations	19.2	1	Relatives	10.0	- 2.0
8	Television	17.4	3	Farm Supply Dealers	8.7	- 0.3
1	Relatives	12.0	8	Television	6.0	-11.4
5	Coops	10.8	7	Radio	4.7	-27.7
3	Farm Supply Dealers	9.0	5	Coops	3.3	- 7.5
				Others added in 1962:		
			11	Government Agencies	8.7	+ 8.7
			0	From own experience	12.7	+12.7

Noble County

1957			1962			Percentage points change 1957-62
Local-Cosmopolitan rank a/	Sources	Pct. b/	Local-Cosmopolitan rank a/	Sources	Pct. b/	
9	Farm Publications	48.2	9	Farm Publications	39.0	- 8.8
10	County Agents	38.4	10	County Agents	28.6	- 9.8
6	Newspapers	21.1	6	Newspapers	14.3	- 6.8
7	Radio	22.3	4	Farm Organizations	11.7	- 2.6
8	Television	15.2	2	Neighbors	11.7	- 2.6
4	Farm Organizations	14.3	1	Relatives	11.7	+ 5.4
2	Neighbors	14.3	7	Radio	7.8	-14.5
5	Coops	8.0	8	Television	3.9	-11.3
3	Farm Supply Dealers	7.1	3	Farm Supply Dealers	2.6	- 4.5
1	Relatives	6.3	5	Coops	1.3	- 6.7
				Others added in 1962:		
			11	Government Agencies	10.4	+10.4
			0	From own experience	16.9	+16.9

a/ Low numbers most local; high numbers most cosmopolitan.
b/ Percentages add to more than 100 since respondents could give more than one source.

in Monroe County. Changes in programming and in the use of T.V. and radio by the extension service may have influenced this shift. The difficulty of establishing mutually exclusive categories of information sources is a clouding feature in the analyses.

There is also evidence of some variance in interviewing procedure. Since it is unlikely that no one offered the "own experience" response in 1957, 1962 interviewers were apparently less insistent that the respondent mention a source outside himself than were the 1957 interviewers. The appearance of the "government agencies" category in the 1962 list indicates an increased consciousness of the presence and the function of such agencies as ASC and SCS.

Most Important Sources

A second question on farm information sources asked respondents to name the single most important source. This added further evidence of the increased reliance on the county extension agent in Monroe County (Table 42). The proportion naming the county agent increased from 15 to 32 percent in Monroe while it changed very little in Noble (from 16.1 to 15.6 percent). Farm publications were the only other source named by more than 10 percent of the respondents in either county on either survey. The proportion naming this source declined in both counties. Although very few respondents in either county named relatives as the most important source, the fact that the proportion naming relatives declined from 3.9 to 1.3 percent in Monroe while it increased from 0.9 to 3.9 percent in Noble supports the hypothesized shift to less personal and local sources in Monroe County. The miscellaneous category increased in both counties, indicating an increased variety of specific sources considered most important. The reasons for the increase in the "none" category are not clear. It may reflect some loss of interest in farm information, which would corroborate evidence presented earlier in this report of a decline in the importance of agriculture, or it may reflect the indecision of a period of rapid change in sources of farm information.

Sources of Advice on Farming

Adoption of a new practice involves getting information about the practices and, for most farmers, getting someone's advice before trying it out. So farmers were asked, "Whom do you talk things over with or get advice from most often when you want to try something new on the farm?" Responses provided further evidence of the increasing reliance on the county agent in Monroe County.

The proportion of Monroe County farmers seeking advice from the county agent increased from 21.5 percent in 1957 to 27.5 percent in 1962, while the comparable proportion of Noble County farmers declined from 24.3 to 17.3 percent. Neighbors and relatives declined in importance as sources of advice in both counties. A greater decline in reliance on relatives as a source of advice in Monroe corresponded with the greater decline in the use of relatives as a source of farm information in that county.

The increase in the miscellaneous category, other individuals, reflects the trend noted above towards a greater variety of sources of information. Since the miscellaneous category was composed chiefly of people with some special training (vocational agriculture teachers, agronomists, or soil conservation engineers)

Table 42. Percent of farmers reporting various sources as the single most important source of farm information, in Monroe and Noble Counties, 1957 and 1962.

Sources	Monroe County 1957 %	Monroe County 1962 %	Noble County 1957 %	Noble County 1962 %
County Agents	14.9	31.9	16.1	15.6
Farm Publications	26.5	12.0	27.7	16.8
Farm Organizations	4.8	6.0	4.5	0.0
Neighbors	6.3	4.7	4.5	3.9
Newspaper	0.0	2.7	6.2	2.6
Farm Supply Dealers	2.0	2.0	0.0	1.3
Television	2.0	2.0	.9	0.0
Relatives	3.9	1.3	.9	3.9
Radio	2.0	.7	2.7	2.6
Cooperatives	1.4	0.0	1.8	0.0
Miscellaneous	2.4	16.0	0.0	20.8
None	0.0	14.7	0.0	32.5
No Answer	0.0	6.0	0.0	0.0

or of people connected with an organization associated with a technical program in agriculture (ACP or SCS), the increase in this category plus the change in the proportion naming government agencies provides further evidence of the shift to more technically competent sources of advice in Monroe County. For these two categories combined, the increase was from 19.6 to 39.4 in Monroe and from 17.6 to 29.3 in Noble County (Table 43).

Farmers as Means of Diffusing Ideas

Farm respondents were asked whether they were more or less likely than others in their circle of friends to be asked for advice about a new farm practice. As Table 44 shows, the proportions answering the affirmative declined in both counties--from 34 to 24 percent in Monroe and from 34 to 21 percent in Noble County.

Table 43. Sources of Advice Concerning New Farm Practices*

Sources	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
County agents	34	21.5	39	27.5	26	24.3	13	17.3
Neighbors	32	20.3	27	19.0	23	21.5	10	13.3
Relatives	22	13.9	15	10.6	24	22.4	15	20.0
Other Individuals	22	13.9	45	31.7	10	9.3	20	26.7
Other government Agencies	9	5.7	11	7.7	11	8.3	2	2.6

*Excludes farms not operated by the head of the household.

Note: Percentages are percents of farmers responding in each type of source. They could give more than one source.

Table 44. Farm respondents thinking of themselves as being more or less likely than their circle of friends to be asked for advice about a new farm practice.

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
More likely	54	34.2	34	23.9	36	33.6	16	21.3
Less likely	76	48.1	103	72.5	60	56.1	55	73.3
No Answer	28	17.7	5	3.6	11	10.3	4	5.4
TOTAL	158	100.0	142	100.0	107	100.0	75	100.0

Probing further, we asked farm respondents whether or not they had actually told someone about a new farm practice within the past year. Responses to this question tell quite a different story. The proportions saying yes were quite comparable in 1957 (23 in Monroe and 19 in Noble) but were quite different in 1962. In 1962, 77 percent of Monroe farmers said yes compared with only 19 percent in Noble County (Table 45). The increase in the proportion of Monroe County

farmers telling someone else about a new practice would appear more likely to be an effect of the increase in personal contacts between farmers and farm specialists accomplished by the rural development program than an effect of the industrial expansion.

Table 45. Farm respondents reporting that they told someone about a new farm practice, within the past year.

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
Told someone	36	22.8	110	77.5	20	18.7	14	18.7
Did not tell	104	65.8	27	19.0	80	74.8	56	74.7
No Answer	18	11.4	5	3.5	7	6.5	5	6.7
TOTAL	158	100.0	142	100.0	107	100.0	75	100.0

Certain Types of Farm Contacts with the Agricultural Extension Service

Table 46 shows results of a series of questions about the degree of acquaintance of farm people with the Extension Service and the frequency of various kinds of contacts with the Extension Service.

A high percentage (82 and 83 percent) of the farmers in both counties had heard of the Extension Service in 1957 and the percentage increased by almost identical amounts between 1957 and 1962 for both counties. In 1962 almost all farmers (97 percent) reported having a knowledge of the Extension Service.

In addition to the general acquaintance question, questions were asked about nine different types of contacts. Four of these were indirect contacts through the three mass media or extension publications and the other five involved personal contact with extension personnel, either for the respondent and his wife or their children.

In spite of the fact that the percent who had heard of the Extension Service increased, the proportions reporting most kinds of contacts decreased. The proportions reporting personal contacts through meetings, farm tours, office visits, farm visits, or 4-H Club activities were generally more stable over time than the proportions reporting indirect contacts through mass media. Among the personal contacts, attendance at extension meetings and farm tours declined in importance in both counties. Visits of the agent to the farm increased 4 percentage points in Monroe while they decreased approximately 7 percentage points in Noble. The

Table 46. Number and percent of households by type of contact with agricultural Extension Service farm respondents.

Type of Contact	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Head of County Agricultural Extension Service	139	83.2	146	97.3	92	82.1	75	97.4
Have or had children in 4-H	64	38.3	59	39.3	41	36.6	33	42.9
Read Extension articles in newspaper	130	77.8	97	64.7	85	75.9	51	66.2
Hear agent on radio	90	53.9	66	44.0	68	60.7	34	44.2
Watch Extension Programs on Television	78	46.7	45	30.0	48	42.9	10	13.0
Use Extension Publications	70	41.9	64	42.7	61	54.5	38	49.4
Visit either agent in his or her office	67	40.1	62	41.3	56	50.0	40	51.9
Attended demonstrations on farm tours	53	31.7	22	14.7	36	32.1	13	16.9
Attend Extension meetings	38	22.7	30	20.0	38	33.9	17	22.1
Had him or her on your place or farm	31	18.6	34	22.7	28	25.0	14	18.2

latter was the most significant intercounty difference.

In addition to the different trends in farm visits, the only other opposing trends were in 4-H contacts and in use of extension bulletins. Contacts through 4-H Clubs decreased slightly in Monroe and increased in Noble, while the opposite occurred for the use of extension publications. For two other forms of contact, the decrease was substantially higher in Noble than in Monroe. These were watching extension programs over T.V., which declined from 46.7 to 30.0 percent in Monroe and from 42.9 to 13.0 percent in Noble, and attendance at extension meetings, which declined from 22.7 to 20.0 percent in Monroe and from 33.9 to 22.1 percent in Noble. Whether or not the decline in T.V. contacts is associated with changes in programming is not known. In any case, it agrees with the evidence from the section on sources of information that T.V. became much less important as a source of farm information during the study period.

It is apparent from these data that new patterns of use of the extension service were evolving but the general pattern of change was the same in both counties. The increased use of farm visits and the smaller decline in attendance at extension meetings in Monroe County no doubt reflect the influence of the rural development program in Monroe County and probably have little or nothing to do with industrial expansion.

The Use of Printed Mass Media in the General Population

Printed periodicals, both newspapers and magazines, represent a major communication system in American life. The use of these mass media was examined for evidence that industrial expansion would broaden the social experience horizons of Monroe County residents.

Although there may be great variations in the extent to which they are read, there are very few families without a weekly or daily newspaper subscription. In Monroe County, the proportion without a newspaper was only 14 percent for both years. In Noble County, it was 9 in 1957 and increased to 13 percent in 1962 (Table 47). Such a wide circulation of newspapers occurred in spite of the fact that no dailies were published in either county. Dailies were brought in from several outside sources, however, and each county had several weekly papers.

Table 47. Number and percent of households taking newspapers in Monroe and Noble counties, 1957 and 1962.

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
Yes	522	86.0	506	86.1	299	90.1	231	86.2
No	75	12.4	82	13.9	29	8.7	35	13.1
No answer	10	1.6			4	1.2	2	0.7
TOTAL	607	100.0	588	100.0	332	100.0	268	100.0

Since subscriptions to newspapers were so nearly universal, they did not provide a test for our hypothesis. For this purpose, the change in the distribution of subscriptions between local weekly newspapers and the non-local dailies was examined. Table 48 shows the percentages of respondents who subscribed to various newspapers for all newspapers with at least eight subscribers. In 1957, 11 papers had at least eight subscribers among sample households in Monroe County. Of these papers, three were local weekly papers and eight were dailies brought in from the outside. Two of the local weeklies were published by the same press

Table 48. Daily and weekly newspapers subscribed to by eight or more households in Monroe and Noble Counties, 1957 and 1962

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Daily Papers								
Wheeling Intelligence	99	16.3	99	16.8				
Zanesville Times Recorder	87	14.3	108	18.4	103	31.0	98	36.6
Martins Ferry Time Leader	68	11.2	97	16.5				
Marietta Times	41	6.8	48	8.2	11	3.3	12	4.5
Wheeling News Register	21	3.5						
Cambridge Jeffersonian	18	3.0	20	3.4	126	38.0	106	39.6
Bellaire Times Leader	13	2.1						
Columbus Dispatch	12	2.0	15	2.6	31	9.3		
Zanesville Signal					23	6.9		
Total of dailies[a]		59.2		64.9		88.5		80.7
Local Weekly Papers								
Monroe County Beacon	352	58.0	337	57.3				
Monroe County Spirit of Democracy and Monroe County Republican (same press)	160	26.4	123	20.9				
Caldwell Journal					179	53.9		
Noble County Leader					15	4.5		
Journal-Leader (merger of two Noble County weeklies)							177	66.0
Barnesville Enterprise			8	1.4				
Total of weeklies[a]		84.4		79.6		58.4		66.0

[a] These totals may error slightly in the direction of overestimation since a few families may have subscribed to more than one daily or more than one weekly newspaper.

and are grouped together in the distributions shown in Table 48. In 1962, 10 papers were reported in Monroe County--four weekly papers, three of which were published in the county and one in a neighboring county, and six dailies from the outside. This was not a major shift but it represented some increase in the proportion of weeklies over dailies. It also indicated a trend toward a reduction in the number of daily newspapers. The same change occurred in Noble County, however. In fact, the reduction of outside dailies was proportionally greater (from five to three) in Noble County. The number of weeklies also was reduced (from two to one) but this was because the two weekly papers present in 1957 were consolidated into one by 1962.

More important perhaps than the relative numbers of daily and weekly newspapers were the particular dailies read and the proportion of the population reading them. Daily newspapers read in Monroe originated in seven different cities, ranging from nearby Martins Ferry, West Virginia, to Wheeling, West Virginia, and Zanesville and Columbus, Ohio. Although the number of papers subscribed to declined by two, the number of cities represented only declined by one and the combined proportion of households subscribing to dailies increased from 59 to 65 percent. In contrast, the number of daily papers declined from five to two in Noble County, the number of cities represented declined from four to three, and the combined proportions of households subscribing to dailies declined from 88.5 to 81 percent. If the trend in Noble represents what might have happened in Monroe without the industrial expansion, it appears that the industrial expansion in Monroe had some effect in the direction hypothesized. Noble was considerably more cosmopolitan in its newspaper reading than Monroe in 1957 and in 1962, as measured by the relative proportion taking daily vs. weekly papers. However, the directions of change were reversed and the differences between the counties were considerably less in 1962.

To the extent that the proportions reading papers from large urban centers are a measure of the degree of exposure to cosmopolitan influences, Monroe County subscriptions represented at least a larger variety of exposure All urban places represented by subscription to dailies in Noble were also represented in Monroe and, in addition, Monroe received dailies from two other urban places. Furthermore, proportionally more of the dailies in Monroe came from the larger urban places such as Wheeling, Columbus, and Marietta.

Magazines, in contrast to newspapers, are almost all national in circulation. They constitute an important system of mass media communication of a national character. The number and types of magazines read are one measure of the extent of cosmopolitan contacts in local areas. Many different magazines were reported in the survey but, for the sake of brevity, they were grouped into the nine types listed in Table 49.

Since almost every family took some type of magazines and many took several, the proportion taking any magazine or the median number of magazines taken were not very discriminating measures of change. Instead, it was necessary to examine the changes in the composition of the subscription list to find evidence of the impact of industrialization on magazine reading. One magazine, the Ohio Farmer, was obviously not national in scope. Subscriptions to the Ohio Farmer declined about equally in both counties. Other farm magazines, although no doubt including some of a more national character than the Ohio Farmer, also declined in both counties but more in Monroe than in Noble.

If we consider only the subscriptions to the 13 types of magazines other

Table 49. Percent of households taking magazines of various types in Monroe and Noble Counties, 1957 and 1962.

	Monroe County		Percentage	Noble County		Percentage
	1957 %	1962 %	Points Change 1957-62	1957 %	1962 %	Points Change 1957-62
Farm Magazines	47.6	35.9	-11.7	49.7	44.8	- 4.9
Ohio Farmer	32.0	27.9	- 4.1	38.3	34.7	- 3.6
Women's Home Magazines	27.8	24.1	- 3.7	24.7	17.9	- 6.8
Short Story and Feature	19.9	28.1	+ 8.2	22.0	25.4	+ 3.4
Pictorial	10.2	22.4	+12.2	15.1	26.1	+11.0
Church	7.3	6.8	- 0.5	4.8	7.1	+ 2.3
Hobby, sports, health and service or veterans organization magazines	6.7	9.5	+ 2.7	9.3	6.7	- 2.6
Business, professional and technical, other than farm and news	8.0	6.3	- 1.7	4.5	6.0	+ 1.5
Pulp	5.8	5.1	- 0.7	5.1	6.7	+ 1.6
Other	1.6	10.6	+ 9.0	2.1	12.4	+10.3
Net change in nonfarm subscriptions			+25.5			+20.7

than farm as a rough measure of cosmopolitan exposure, we find that the net increase in subscriptions during the study period was greater in Monroe than in Noble County by about 5 percentage points. Church magazines are also somewhat more likely to be state or local in circulation. Subscriptions to these magazines declined in Monroe and increased in Noble. If these are excluded, the difference in the net increase between the two counties is increased to 7.7 percentage points.

The magazine reading patterns of the farm respondents differed from that of the population as a whole, mainly in the fact that more farmers took farm magazines and fewer took some of the nonfarm magazines. Changes between 1957 and 1962 for the farm population followed essentially the same trends as in the population as a whole. Subscriptions to farm magazines, however, declined in both counties and the net increase in other magazines was higher in Monroe than in

Table 50. Percent of farm households taking magazines of various types in Monroe and Noble counties, 1957 and 1962.

	Monroe County 1957 %	Monroe County 1962 %	Percentage Points Change 1957-62	Noble County 1957 %	Noble County 1962 %	Percentage Points Change 1957-62
Farm Magazines	85.6	76.7	- 8.9	87.5	80.5	- 7.0
Ohio Farmer	70.0	66.7	- 3.3	74.1	64.9	- 9.2
Women's Home Magazines	22.1	18.7	- 3.4	28.6	13.0	-15.6
Short Story and Features	11.4	20.7	+ 9.3	25.9	20.8	- 5.1
Pictorial	6.6	20.0	+13.4	10.2	28.6	+18.4
Church	6.0	4.0	- 2.0	2.7	2.6	- 0.1
Hobby, sports, health and service or veterans organization magazines	2.4	8.1	+ 5.7	9.9	6.5	- 3.4
Business, professional and technical, other than farm and news	5.4	3.4	- 2.0	2.7	5.2	+ 2.5
Pulp	2.4	4.7	+ 2.3	1.8	5.2	+ 3.4
Other	1.2	6.0	+ 4.8	0.0	3.9	+ 3.9
Net change in nonfarm subscriptions			+28.1			+ 4.0

Noble. The main difference was that the net increase in nonfarm magazines was much greater in Monroe than in Noble for the farm population than for the population as a whole (Table 50).

Special Training for Nonfarm Work

Various programs are available to youth and adults in American communities for learning new skills or improving old skills. These special training programs are important means of upgrading the labor force. Assuming that the expansion of nonfarm employment opportunities would increase the use of facilities for improving the level of nonfarm occupational skills and possibly decrease the use of

facilities to improve the level of farm skills, we examined change in the proportion of the heads of households with special training of various types. Since many people were in both surveys and since some of the training opportunities, such as college and high school, are not normally used by persons past a certain age, limiting the observation to heads of households reduced the chance of substantial change. It was not expected that the amount of change would be large but any indication of a change would be considered of some significance.

Table 51 shows the proportion of heads of households reporting each of six kinds of special training for nonfarm jobs. A miscellaneous other category was used to record a wide variety of minor training opportunities. Increases occurred in the proportions reporting the four major kinds of special training in Monroe. These were college, on-the-job training, vocational or trade school, and armed forces training. In the meantime, decreases occurred in the proportions reporting two minor kinds of training opportunities, night school and high school, and in the miscellaneous other category. The total proportion reporting special training for nonfarm jobs increased from 21.1 to 22.7 percent. Although the pattern of change was similar in Noble, proportions in three of the four major kinds of training increased and proportions in one major and two minor kinds and in the miscellaneous other category decreased. The total proportion decreased from 25.5 to 23.1. Although the intercounty differences were small, they were in the expected direction; i.e., there was some tendency toward increase in the use of facilities to improve nonfarm work skills through special training in Monroe and some decrease in Noble County.

Table 51. Heads of Households having special training for nonfarm jobs by type of training.

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
College programs	48	37.5	51	38.1	25	29.4	20	32.3
On-the-job training	23	18.0	31	23.1	18	21.2	12	19.4
Vocational or trade school	19	14.8	30	22.4	6	7.1	14	22.6
Armed Forces training	18	14.1	20	14.9	18	21.2	18	29.0
Night School	10	7.8	3	2.2	4	4.7	2	3.2
High School	9	7.0	7	5.2	4	4.7	2	3.2
Other	15	11.7	8	6.0	10	11.7	2	3.2
Total who obtained training and percent this is of total sample N	128	21.1	134	22.7	85	25.5	62	23.1

Special Training for Farm Work

Expansion in nonfarm employment opportunities without any major change in farm employment opportunities would be expected to reduce the emphasis on training for farming. Again, the fact that observations were limited to heads of households and the fact that the study period was short (5 years) was expected to hold change to a minimum. Two additional factors, namely, the increased emphasis on special training generally, particularly that available to youth, and some increased availability of extension training in agriculture due to added personnel in connection with the rural development program, were expected to partially counteract the influence of industrial expansion.

Table 52 indicates that the expected change occurred. The proportion of heads of households in Monroe reporting special training for farm work declined from 13.3 to 10.7 percent. Although the proportion for Noble County also declined, the decline was less (from 16.9 to 15.3) and the difference in percentage points decline, although small (2.6 vs. 1.6), was in the right direction. The difference in percentage points decline might well have been larger except that vocational agricultural training increased substantially more in Monroe than in Noble County. Vocational agriculture was the principal training opportunity for special training in agriculture. Of those reporting special training in 1962, 66.7 percent in Monroe and 43.9 percent in Noble reported vocational agriculture.

Table 52. Heads of Households (Farm and Non-Farm) Reporting Special Training for Farming, By Type of Training.

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Vocational Agriculture	38	46.9	42	66.7	17	30.4	18	43.9
On-the-job training	11	13.6	13	20.6	17	30.4	15	36.6
College programs	13	16.0	6	9.5	2	3.6	3	7.3
Night School	12	14.8	1	1.6	5	8.9	2	4.9
County Extension Training Program and 4-H Club Work	19	23.4	9	14.3	7	12.5	5	12.2
Other	4	4.9	3	4.8	8	14.2	1	2.4
Total who obtained training and percent this is of total sample N.	81	13.3	63	10.7	56	16.9	41	15.3

CHANGES IN ATTITUDES AND OPINIONS

Although difficult to measure, changes in attitudes or outlook of the population may be one of the most important effects of industrial expansion. At the time of the first survey, which was after construction on the plants was well underway, the general impression from talking to people in Monroe County could be described as one of optimism, tempered by some apprehension about the changes which industrial expansion might bring. Most people voiced the feeling that the new industrial plants would be a major impetus to economic growth in the county but many were skeptical about their own chances of participating extensively in the benefits. Since construction had been going on for some time, it was already obvious to some that expanded employment opportunities could pass them by. More than 2,000 persons were already employed in various new construction projects in the county. Yet, 1957 sample data indicated that fewer than one-fifth of these jobs had gone to residents of Monroe County.

In spite of this evidence of the difficulty of getting one of the construction jobs, more than two-fifths of the respondents said they thought they were qualified to hold one of the new jobs which would be open when the new plants started operation. About 27 percent hopefully said they were planning to seek one of the new jobs. Of those planning to seek one of the new jobs, only 60 percent actually tried to get a job, however, and fewer than half (45 percent) succeeded.

To obtain more concrete measures of changes in attitudes and opinions, we asked a series of opinion questions in both surveys. We asked how the respondent felt about the plants and which groups he thought approved or disapproved of them. We asked about expectations of benefits or costs to individuals and to the community in 1957 and about actual benefits and costs to individuals and to the community in 1962. We asked which of several pairs of groups benefited the most and about trends in the adequacy of a number of important community facilities, services, and relationships in the community and the county. Among the community facilities and relationships asked about were such items as schools, roads, economic opportunities, transportation facilities, and social interaction.

Approval of the New Plants

Three kinds of opinion data were obtained that provided measures of approval or disapproval of the new plants: 1) opinions of the respondents themselves, 2) what respondents thought their friends' opinions were, and 3) groups identified as favoring or objecting to the new plants. Comparable questions were asked in both surveys so that before and after and intercounty differences could be observed.

When asked how they felt about the coming of the new industrial plants, the majority of all respondents in 1957 (93 percent in Monroe County and 97 percent in Noble County) said they approved. The proportion approving did not change from one survey to the other, indicating that experience did not alter these opinions (Table 53).

Respondents' opinions about how their friends felt showed more change between the two surveys. In 1957, 93 percent of the Monroe County and 96 percent of the Noble County respondents said that their friends approved but in 1962 the comparable proportions had dropped to 86 percent in Monroe and 56 percent in Noble.

Table 53. Percent of respondents approving or disapproving the new industrial plants and percent of respondents saying their friends approved or disapproved, Monroe and Noble counties, 1957 and 1962.

	Monroe				Noble			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
Respondents' Opinion								
No answer	9		39		89		133	
Approved	558	93.3	511	93.1	236	97.1	131	97.0
Disapproved	7	1.2	20	3.6	1	0.4	0	
Undecided	33	5.5	18	3.3	0		4	3.0
Mixed feelings	0		0		6	2.5	0	
Don't know	0		0		0		0	
Total	607		588		332		268	
N	598	100.0	549	100.0	243	100.0	135	100.0
Friends' Opinion								
No answer	8		7		61		9	
Approved	559	93.3	500	86.0	260	95.9	144	55.6
Disapproved	7	1.2	16	2.8	0		0	
Undecided	0		39	6.7	0		4	1.5
Mixed feelings	18	3.0	0		0		0	
Don't know	15	2.5	26	4.5	11	4.1	111	42.9
Total	607		588		332		268	
N	599	100.0	581	100.0	271	100.0	259	100.0

The decrease in Noble was not because of increased numbers of disapprovals, because there were none in either survey, but rather because of an increase in the proportion who said they didn't know what their friends thought about it. This would suggest that respondents felt more confident to say what their friends'

attitudes were toward industrial expansion, in general, than to say what their friends' attitudes were toward a specific industrial expansion which has been observed by everyone in the recent past and, therefore, about which experience could vary.

Groups Favoring the Plants and Groups Objecting

In the 1957 survey, respondents were asked two questions, "In your opinion which groups in the county have been favorable to the new plants being built in Monroe County?" and "Which groups, if any, have objected?" Comparable questions were asked in 1962. Some respondents answered in terms of aggregates of people, such as old people or farmers, and others named specific organized groups. Thus, it was not possible to make exact comparisons of percentages. However, the rank order frequencies of several groups mentioned and the differences in the composition of the lists of the groups mentioned provide clues to changes within counties and differences between counties.

In 1957 most respondents in Monroe County mentioned general classes or categories of persons when asked which groups were favorable. These included such groups as labor, businessmen and professionals, farm groups, and civic groups. In 1962, however, they named a longer list of more specific groups. This suggests that 5 years of personal experience and observation had provided a more concrete base from which to answer. The proportion saying that they could name no groups which were favorable or that they did not know of any groups which were favorable increased from 18 percent in 1957 to 26 percent in 1962. Thus, there was both an increase in specificity of opinion regarding which groups were favorable and an increase in the proportion unwilling or unable to specify a favorable group.

In Noble County the proportion of respondents who didn't know of any groups which were favorable was higher than in Monroe in both surveys. It was 36 percent in 1956 and increased to 68 percent in 1962. In both surveys Noble County respondents tended to name general categories, indicating that most of them were expressing a general culturally based opinion, rather than speaking from concrete personal experience.

Only 12 percent of the 1957 Monroe County households mentioned groups of persons whom they thought would object to the new plants. The majority of these mentioned older people but other groups, such as farmers, businessmen, townspeople, and people in fixed income brackets, were also mentioned. The same groups were mentioned again in 1962 but the relative frequencies had changed. Older people were still the most frequently mentioned but they were not mentioned as frequently as in 1957. Farmers, on the other hand, were mentioned more frequently as in 1962. In addition, a number of groups were mentioned in 1962 which were not mentioned in 1957. These included people who objected to tax increases, community "hardheads," people who wanted work at one of the plants and couldn't get it, people who objected to outsiders moving into the community, people who had to move, people not wanting to work hard, and the River Local School Board (the school which had to be moved to make room for plant construction). These responses reflect the extent to which attention was focused specifically on certain groups by 5 years' experience with the new plants.

As might be expected, Noble County respondents answered the questions regarding objecting groups from a general cultural framework in both surveys. Their responses reflect very little close-hand experience with the effects of the expansion in Monroe on the position of specific groups of people.

Benefits

Questions regarding benefits were asked in both surveys. In the first survey, people were asked if they expected to benefit personally from the expansion in the industry; if so, in what way and if not, why not. In the second survey, they were asked if they had benefited from the expansion in industry; if so, in what way; and if not, why not.

More people expected to benefit personally than did. In 1957, 62 percent of the Monroe County respondents said they expected to benefit personally, 10 percent said they didn't know or couldn't answer the question, and 28 percent did not expect any benefits (Table 54). In 1962, only 45 percent reported that they had benefited, 50 percent said they hadn't benefited, and 5 percent were undecided.

Table 54. Percent of respondents expecting and receiving benefits from the coming of the new plants.

	Monroe		Noble	
	1957	1962	1957	1962
Benefited	61.8	45.2	41.9	13.1
Undecided	0.0	3.4	12.3	15.7
Will (has not) benefit	27.8	50.3	44.6	70.5
Don't know	8.9	0.0	0.0	0.0
No answer	1.5	1.0	1.2	0.7
	100.0	99.9	100.0	100.0

Some of the reasons for the discrepancy in the proportions expecting benefits and the proportions receiving benefits become clear when responses to questions regarding the ways in which respondents expected to benefit or why they did not expect to benefit and the ways they did benefit or why they did not benedit are examined. A principal reason for not having benefited was that fewer persons in Monroe County got jobs than expected to get them. Of those expecting to benefit, 47 percent answered the question, "In what way do you expect to benefit?" by saying that they thought they or their relatives would be able to get work because of the plants. There were 180 persons in this group. Not all of these were successful, however, in getting jobs at the plants. Among those who said they had benefited, 47 percent or 127 persons said that the benefit was in the form of a job, either for themselves or a member of their families. This included both jobs at one of the plants and jobs somewhere else which became available because of the new industrial development.

Several other benefits anticipated in 1957 did not materialize as expected.

In 1957, 12 percent anticipated an increase in farm prices and 7 percent anticipated an increase in property values. In 1962, less than 1 percent said that farm prices had increased and only about 4 percent thought that property values had gone up. On the other hand, expectations regarding increases in business activity and general improvement in living conditions were closely parallel. Twenty percent expected business activity to increase and 20 percent said in 1962 that it had increased. The corresponding proportions for improved living conditions were 10 and 9.

Although they were located further from the new development, 42 percent of the 1957 Noble County respondents also expected to benefit from the expansion of industry in Monroe County. Our assumption that the effects of the new plants would be very limited in Noble County was verified, however, by the answers of the Noble County respondents in 1962. Only 13 percent said they had benefited personally. Most of these benefits were of the indirect variety, such as a general increase in business activity, a better local market and more money in circulation. Only four persons in the Noble County sample reported having benefited because of employment. Three had obtained jobs at the plant and one had a job in a related development.

Based on sample data, we estimated that direct benefits through employment came to an estimated 22 percent of the Monroe County households, compared with less than 2 percent of the Noble County households.

Reasons given for not expecting personal benefits and reasons for not having received benefits reflect the concentration of older persons in the population in Monroe County. Of the respondents not expecting benefits in 1957, about one-half said it was because they were too old; 12 percent said it was because they wouldn't be seeking one of the jobs since they expected they would always have other employment, and 11 percent predicted they would not be able to get a job at one of the new plants even if they tried. Other less frequent reasons for not expecting benefits included: poor health which would prevent getting a job, an expected increase in pay rates which would create labor problems for them as employers, and an increase in living expenses.

Among the reasons given in 1962 for not having benefited, being too old was still important but it was not as frequently given (13 percent). "Don't work there" was the most frequently given reason for not having benefited; with 43 percent giving such a reason. Several other reasons were given for not benefiting, none of which were mentioned by 1957 respondents as reasons for not expecting to benefit. These included: higher prices, higher taxes, farm help harder to get, no help to business, lost money on real estate, hurt my business, and no increase in jobs for people of the county.

In Noble County, being "too far away" ranked second to being too old as a reason for not expecting any benefits in 1957 and was the top ranking reason in 1962 for not having received any benefits. Other reasons reported with similar frequencies in both surveys, were: it doesn't affect me, can't get work there, and have other work.

Groups Benefiting Most

Further insights into changes in attitudes are provided by opinions regarding which groups of people were expected to benefit most (1957) and regarding which

groups had benefited most (1962). This information was obtained by asking respondents to choose between two groups in a series of six pairs of groups or segments of the population. The six pairs of groups were: older persons vs. younger persons, farmers vs. townspeople, businessmen vs. skilled workers, persons with high school or more education vs. persons with less than a high school education, life-long residents vs. newcomers, and the new companies vs. the community. Although interviewers were instructed to ask for a definite choice, they were not always successful in getting one. Some informants, particularly in the 1962 survey, found it too difficult to choose between some groups and answered that they did not know which group had benefited most or that both groups in the pair had benefited about equally.

The greatest concensus occurred in the responses to the question regarding relative benefits to younger vs. older people. The proportions choosing young people were 97 percent for both Monroe and Noble in 1957, indicating agreement with the general belief that industrial expansion benefits accrue to the young more than the old. Monroe County responses in 1962 indicated that first-hand experience produced some alteration in opinions. The proportion saying in 1962 that youth had benefited more than older people was less than the proportion of the 1957 respondents expecting youth to benefit the most. Conversely, the proportion saying older people had benefited the most, was larger than the proportion expecting older people to benefit the most (Table 55). Thus, responses based on experience indicated that benefits were not as one-sided in favor of younger people as anticipated. But the proportion thinking that older people had benefited most was still a small minority (8 percent).

In Noble County, the principal effect of the 5 years of experience was to reduce concensus regarding the choice of youth as the group benefiting most. Although there was some increase in recognition of benefits to older persons, the big change was an increase in the respondents who were uncertain or undecided. In 1957, Noble County respondents, like Monroe County respondents, answered from a general cultural frame of reference which holds that the young are expected to benefit most from economic changes which produce major increases in employment opportunities. Neither group could answer from first-hand experience. In 1962, however, they were answering in terms of what had happened. Most Monroe County respondents found it possible to make the choice but for many Noble County respondents the industrial development was too far removed from their personal experience to allow for a definite choice.

The choice reflecting the next largest concensus was the choice between people with high school or more education and people with less than a high school education. In 1957, the proportion choosing those with high school or more education was 95 percent in Monroe County and 87 percent in Noble County (Table 56). After 5 years of experience, the proportion thinking that people with high school or more education had benefited most was less in both counties (87 percent in Monroe and 57 percent in Noble). There was not an offsetting increase in the proportion thinking those with just grade school education had benefited most, however. Instead the proportions thinking both had benefited and the proportions saying they did not know which had benefited most were higher in 1962. As would be expected in the control county, the increase in don't know answers was much greater in Noble County than in Monroe County.

A majority in both counties chose townspeople in 1957 when asked whether they expected farmers or townspeople would benefit most (Table 57). What had happened in Monroe County did not change the majority opinion but a substantial

Table 55. Expectations and opinions regarding whether younger or older people would benefit or had benefited most from the expansion of industry in Monroe County.

Group choices as benefiting most	Monroe		Noble	
	1957	1962	1957	1962
Younger people	97.2	84.8	96.6	65.4
Older people	2.8	8.0	2.2	5.5
Both older and younger people	---	5.9	1.2	3.2
Don't know	---	1.2	---	25.8
Total	100.0	99.9	100.0	99.9

Table 56. Expectations and opinions regarding whether people with a high school, or more, education or people with less than a high school education would benefit or had benefited most from the expansion of industry in Monroe County.

Group choices as benefiting most	Monroe		Noble	
	1957	1962	1957	1962
High school or more education	95.1	86.8	86.7	57.1
Less than high school education	4.9	3.6	9.5	2.3
Both	---	3.6	3.8	2.7
Don't know	---	5.9	---	37.8
Total	100.0	99.9	100.0	99.9

proportion (16 percent) of respondents in Monroe County thought both had benefited about equally and an even larger proportion (41 percent) of Noble County respondents were undecided. Although the proportions choosing farmers and townspeople both declined, the proportion choosing farmers declined the most, indicating a larger margin of error in predicting benefits to farmers than in predicting benefits to townspeople. Again, the principal trend difference between Noble and Monroe County was a greater increase in the undecided category in Noble County.

Table 57. Expectations and opinions regarding whether farm or town people would benefit or had benefited most from the expansion of industry in Monroe County.

Group choices as benefiting most	Monroe		Noble	
	1957	1962	1957	1962
Farmers	26.3	16.9	23.9	8.5
Town people	73.7	61.9	66.6	40.5
Both	----	15.5	9.5	10.1
Don't know	----	5.7	----	40.9
Total	100.0	100.0	100.0	100.0

Respondents in both counties agreed in 1957 that skilled workers were more likely to benefit than businessmen and the proportions were very similar (Table 58). By 1962, experience had caused some change in opinion in both counties. Monroe County opinion shifted in favor of businessmen. A similar shift occurred in Noble but the plurality still thought skilled workers had benefited most. Again, Noble County responses showed greater increase in indecision, reflecting the greater distance and less intimate experience in Noble County people.

Opinion of who would benefit most was fairly evenly divided between old-time residents and newcomers in the first survey in Monroe County but a majority of Noble County respondents picked old-timers (Table 59). Experience shifted opinion in favor of newcomers in Monroe County. The proportion thinking newcomers had benefited most was higher by 3 percentage points, and the proportion thinking that old-time residents had benefited more was lower by 23 points. In the meantime, the relative distribution of choices between newcomers and old-timers remained about the same in Noble, and the number of don't know responses increased.

The final pair of groups asked about were the new companies and the community. Again, opinion in 1957 was fairly evenly divided between the companies and the community, with the community receiving a small edge in the votes in Monroe County. After 5 years' experience, the proportion thinking the community had benefited

Table 58. Expectations and opinions regarding whether businessmen of skilled workers would benefit or had benefited most from the expansion of industry in Monroe County.

Group choices as benefiting most	Monroe		Noble	
	1957	1962	1957	1962
Businessmen	36.4	43.5	35.4	25.9
Skilled workers	63.6	38.9	59.2	27.4
Both	----	9.8	5.4	5.8
Don't know	----	7.8	----	40.9
Total	100.0	100.0	100.0	100.0

Table 59. Expectations and opinions regarding whether old-timers or newcomers would benefit or had benefited most from the expansion of industry in Monroe County.

Group choices as benefiting most	Monroe		Noble	
	1957	1962	1957	1962
Old-timers a/	48.2	25.3	58.1	35.3
Newcomers	51.8	54.5	38.6	17.4
Both	----	13.1	3.3	5.4
Don't know	----	7.2	----	41.9
Total	100.0	100.1	100.0	100.0

a/ People who have lived in the county all their lives.

most was substantially higher than the proportion thinking the companies had benefited most (Table 60). A majority of Noble County respondents chose the community in 1957, with the proportion choosing the community double the proportion choosing the companies. Five years later, the proportions choosing community and companies were about equal. Both were much smaller, however, and the proportion undecided was much greater.

Table 60. Expectations and opinions regarding whether the new companies or the community would benefit or had benefited most from the expansion of industry in Monroe County.

Groups choices as benefiting most	Monroe		Noble	
	1957	1962	1957	1962
Company	46.2	33.3	31.6	21.3
Community	53.8	45.5	59.9	23.9
Both	----	8.6	8.5	7.7
Don't know	----	12.6	----	47.1
Total	100.0	100.0	100.0	100.0

In addition to the paired choice questions, respondents were asked to name groups which they thought definitely would not benefit (1957) or definitely had not benefited (1962). A wide variety of groups was named but older people, retired people, people on fixed incomes, or people on Social Security were named most frequently in both surveys and in both counties. Farmers were next in frequency. A larger proportion of Monroe than Noble respondents in 1957 thought that older people definitely would not benefit (23 percent vs. 10 percent, respectively). In 1962, proportionally fewer Monroe County people thought that old people had not benefited and proportionally more thought that farmers had not benefited. The principal change in Noble was an increase in the proportion who said they did not know what group to name. Older people and related categories were mentioned along with farmers but several new groups were named which had not been named in 1957. These included: people in Noble County, everybody, and people who can't get work.

Benefits to the Community as a Whole

Responses to the question, "Do you think the overall effect of the new plants in Monroe County will benefit (have benefited) the communities in this county or not?" provides a summary measure of changes in opinion regarding benefits from industrial expansion. Apparently the expectations of Monroe County residents in 1957 were more realistic than the expectations of Noble County residents. In 1957, 91 percent of Monroe County households expected their communities to benefit. Five years later, 89 percent expressed the opinion that their communities had benefited. In Noble, an optimistic 83 percent said in 1957 that they expected their communities to benefit but in 1962 only 29 percent reported that Noble County communities had benefited (Table 61).

Table 61. Percent of respondents expecting their communities to benefit (1957), and the percent stating that their communities have benefited (1962) from the coming of the new plants.

	Monroe		Noble	
	1957	1962	1957	1962
Expect benefit / Benefited	91.1	88.8	82.8	28.7
Undecided	5.6	3.7	7.5	20.1
Will not benefit / Have not benefited	1.5	6.5	8.5	47.8
No answer	1.8	1.0	1.2	3.4

Changes in Community Facilities and Social Arrangements

To obtain some general indicators of trends, respondents in both surveys were asked a series of questions about recent changes in various community facilities and various social situations. Although they were not asked to indicate specifically what had caused the observed changes, the inference is that at least some of the changes occurring in the 5-year period, 1957-62, were attributable to the new industry in Monroe County.

For each of the following items, respondents in both surveys were asked to say whether, in the past 5 years, the situation in their communities had changed for the better, for the worse, or was about the same: roads, schools, churches, neighborliness, friendliness between town and country, chance to get ahead, and getting new industry. A similar question was asked regarding each of the following additional items in 1962: shopping facilities, health facilities, public recreational facilities, private recreational facilities, and job opportunities for young people.

From responses regarding items included in both surveys, it was possible to make intercounty comparisons of trends in conditions over a period of 10 years. Comparisons of responses to questions about items included only in the 1962 survey provided additional information on directions of change in the 5-year period between the two surveys. The results are presented in Tables 62 and 63.

For four of the seven items included in both surveys, the distribution of opinion changed very little regarding trends in conditions in Monroe County. These were: schools, churches, neighborliness and friendliness between town and country people. Opinion indicated that road conditions improved more during the period 1957-62 than in the previous 5-year period and that chances of getting new industry and chances of getting ahead for the individual did not improve as much in the period 1957-62 and in the previous 5-year period (Table 62).

Table 62. Percent of respondents saying that the situation, with regard to certain items, had changed for the better, for the worse, or remained the same in their communities during the previous 5 years in Monroe and Noble Counties, 1957 and 1962.

Item	Opinion of change	Monroe		Noble	
		1957	1962	1957	1962
Roads	better	68.7	76.2	62.4	62.9
	same	20.0	16.8	29.8	31.8
	worse	11.4	5.3	7.8	4.9
	don't know	0.0	1.7	0.0	0.4
Schools	better	62.5	60.3	54.8	50.0
	same	27.5	24.8	32.8	29.0
	worse	10.0	9.7	12.4	17.3
	don't know	0.0	5.2	0.0	3.8
Churches	better	55.7	48.7	47.5	33.5
	same	40.3	44.2	45.5	59.8
	worse	4.0	4.0	7.0	5.6
	don't know	0.0	3.1	0.0	1.1
Neighborliness	better	27.8	26.2	23.8	14.9
	same	56.0	55.4	53.7	76.4
	worse	16.2	16.3	22.5	8.2
	don't know	0.0	2.1	0.0	1.5
Friendliness between town and country people	better	39.7	32.5	41.2	21.0
	same	54.6	59.6	53.6	74.2
	worse	5.7	4.5	5.2	2.6
	don't know	0.0	3.4	0.0	2.2
Chances of getting new industry	better	95.0	63.3	68.7	26.3
	same	4.6	27.1	26.0	51.5
	worse	0.4	5.2	5.4	14.3
	don't know	0.0	4.4	0.0	7.9
Chances of getting ahead	better	73.8	40.4	42.1	18.2
	same	15.2	38.5	28.3	47.4
	worse	11.0	16.2	29.6	31.4
	don't know	0.0	4.8	0.0	3.0

In Noble County, opinions changed very little regarding roads and schools, but for all other items opinions indicated that less improvement occurred in the period 1957-62 than in the period 1952-57. The switch in opinion was from better to same rather than from better to worse, indicating that conditions remained on a plateau of "no change" during the period 1957-62.

Changes in opinion regarding the condition of roads agree with the objective evidence of relative activity in road building presented earlier in this report. There was a substantial increase in road construction work in Monroe County in the 1957-62 period, while Noble County road work remained on a stable level.

It is apparent that the construction activity and the wave of optimism about the future that hit Monroe County when the new industry came in 1956-57 influenced opinions regarding the chances of getting new industry into the area and the individual's chances of getting ahead. It also appears that there may have been some contagion of this feeling of optimism in Noble County. In 1957, 92 percent of the Monroe County respondents thought there had been improvement during the previous 5 years in the chance of getting new industry in the county. The comparable percentage for Noble County was 65 percent. In 1962, this proportion was only 63 percent in Monroe and only 26 percent in Noble. These changes in opinion suggest that some disillusionment regarding the prospects of further industrial development occurred in both counties during the period 1957-62. In Monroe, the fact that no satellite industrial developments had developed in the period after the original plants were completed was probably a major factor in this disillusionment. Trends in opinions regarding the chances for an individual to get ahead followed closely trends in opinion regarding chances of getting new industry.

The data suggest no explanation for the decline in optimism in Noble County regarding neighborliness and friendliness between town and country people.

Opinion questions regarding four types of community facilities were added to the 1962 survey. The results are presented in Table 63. Proportions saying that facilities had changed for the better were generally higher in Monroe County than in Noble County but intercounty differences were not large enough to be very significant for two facilities--shopping and health facilities. In the case of both public and private recreational facilities, however, the proportions saying conditions had improved were substantially higher in Monroe County than in Noble County (Table 63).

Responses to the question, "Have job opportunities for young people changed for the better or worse, or are they about the same?" revealed major differences between the counties. Nearly half (47 percent) of the Monroe respondents said job opportunities for youth had changed for the better during the past 5 years. The comparable proportion in Noble County was only 8 percent (Table 64). A substantial minority (20 percent) in Monroe thought that job opportunities had changed for the worse, however, and this proportion was much higher in Noble County (52 percent).

Community Identifications

Changes in locality identification provide another measure of the impact of industrial development on attitudes. We hypothesized that the introduction of new industries would increase the range of social contacts for local residents and thus cause some shifts in locality identification. To obtain a measure of such changes, we asked respondents two questions in each survey. The first question was, "When you are a long way from your home and someone asked you 'Where are you from?' how would you answer?" The second question was, "When you are

Table 63. Percent of respondents saying that the situation, with regard to certain community facilities, had changed for the better, the worse, or remained the same in the past 5 years, Monroe County and Noble County, 1962.

Facility	Opinion of change	Monroe	Noble
Shopping	better	59.7	56.2
	same	32.0	38.2
	worse	6.2	4.5
	don't know	1.7	1.1
Health	better	48.4	44.9
	same	37.7	46.4
	worse	11.7	4.5
	don't know	2.2	4.1
Public recreation	better	52.9	34.0
	same	40.0	56.2
	worse	2.6	3.4
	don't know	4.5	6.4
Private commercial recreation	better	42.5	28.7
	same	50.3	60.3
	worse	1.4	3.8
	don't know	5.9	7.3

Table 64. Percent of respondents saying that opportunities for jobs for young people had improved during the past 5 years in Monroe County and Noble County, 1962.

Change	Monroe	Noble
Better	47.2	8.3
About the same	29.2	38.3
Worse	20.1	51.9
Don't know	3.1	1.5

away from home but still here in the county, what would you say if someone asked you 'Where you are from?'" Responses to the first question are presented in Table 65 and responses to the second are presented in Table 66.

Reasoning that the new plants would increase pride in the county, we hypothesized that there would be an increase in the number of Monroe County residents who would identify with Monroe County when they were away from the county but that there would be little change in identification with Noble County. This is essentially what happened (see Table 65). The proportion identifying with Monroe County increased from 37 to 47 percent while the proportion identifying with Noble County decreased from 48 to 42 percent. The increase in the proportion identifying with Monroe County was accompanied by a decrease in the proportion identifying with the state. Contrary to expectations, however, there was a small increase in the proportion identifying with their home town or township and no change in the proportion identifying with the county seat. Very likely if the new industry had been located nearer the county seat, more of the increased activity would have been concentrated there and there would have been an increase in identification with the county seat. The effect of industrial expansion was to "put the county on the map" and not the county seat town.

Table 65. Percent of respondents identifying with each of several types of localities when they are far away from home.

Locality	Monroe		Noble	
	1957	1962	1957	1962
Home town or township	22.2	26.4	16.9	22.0
County Seat	16.8	16.3	21.1	24.3
County	36.9	47.4	48.5	42.5
Southeast Ohio	1.5	1.2	3.6	1.5
Ohio	17.1	2.7	4.2	2.2
Other a/	5.3	2.1	7.5	4.9
No answer	0.0	4.1	1.8	4.1

a/ Includes another county or a state other than Ohio.

Responses to the questions regarding locality identification when away from home but still in the county provide further evidence of the effect of the specific location of the plant. Reasoning that increased social and economic activity, consequent to the industrial development, would tend to shift locality identifications from the neighborhood or small home community to a large community with a larger population center we expected an increase in the proportion of

Table 66. Percent of respondents identifying with each of several types of localities when they are away from home, but still in the county.

Locality	Monroe		Noble	
	1957	1962	1957	1962
Home town	65.6	66.1	52.3	50.4
Home township	4.6	2.9	6.1	3.3
County Seat	21.7	18.0	31.0	29.1
County	1.3	3.4	3.7	3.7
Other a/	3.0	2.1	4.6	6.0
No answer	3.8	7.5	2.4	7.5

a/ Includes landmark, route number and other county or state.

Monroe County respondents identifying with the county seat town, Woodsfield. This did not occur. In fact, there was very little change in identifications and the proportions identifying with Woodsfield actually decreased (Table 66).

Attitudes Toward Industrial Work

We hypothesized that the addition of new plants to Monroe County would alter the experience of Monroe County people in such a way as to produce more favorable attitudes toward industrial work. To test this hypothesis, responses to a series of six statements about industrial work were obtained in both surveys. These were converted to numerical scores by assigning weights to the responses on a 5-point scale, ranging from most favorable through neutral to least favorable.

Median scores indicate that there was very little change in attitude among the sample populations in both counties (Table 67). Attitude scores were more favorable in Monroe than in Noble in both surveys. Contrary to expectations, the attitudes in Monroe County became less favorable while the attitudes in Noble County became more favorable during the period. In neither case was the change large enough to be significant.

Comparison of the distributions of scores for the two surveys indicates a trend toward the middle or neutral position in Monroe County but a trend toward the extremes in Noble County. For example, in Monroe County the proportion in the middle range increased from 73.8 percent to 75.5 percent, with a decline of from 13.7 to 11.5 percent in the most favorable and a small increase in the least favorable. In Noble County the proportion in the middle range declined from 76.2 to 71.8, while the proportion in the unfavorable category increased from 14.7 to

Table 67. Median scores[a/] on attitude toward industry for Monroe and Noble Counties, 1957 and 1962.

County	1957	1962
Monroe	14.80	14.93
Noble	15.60	15.23

a/ The lower the score the most favorable the attitude.

Table 68. Distribution of attitude toward industry scores.

Score	Monroe		Noble	
	1957	1962	1957	1962
0-11 (most favorable)	13.7	11.5	9.1	9.4
12-18 (middle or neutral)	73.8	75.5	76.2	71.8
19-30 (least favorable)	12.5	13.0	14.7	18.8

18.8 and the proportion in the favorable category remained essentially unchanged, increasing only from 9.1 to 9.4 percent (Table 68).

Attitudes Toward Farm Work

Although agriculture had been declining in importance in these counties for several decades, it remained a primary resource in both Monroe and Noble counties at the beginning of the study period. We expected, therefore, that most citizens, whether they lived on a farm or not, would have an attitude toward farm work. We also expected that the expansion of industrial activity, by increasing the range and number of job opportunities outside of agriculture, might alter attitudes toward farm work. To test this hypothesis, we asked respondents in both surveys a series of six questions about farming and farm work. Responses were scaled in the same manner as were the responses to the six questions about industrial work, except that in this case the higher scores represented the more favorable opinion.

Contrary to expectations, median scores in Monroe County indicated no change in attitudes toward farming (19.8 for both periods) and only a small increase in favorable opinion in Noble County (from 20.2 to 20.6).

CHANGES IN SOCIAL ORGANIZATION

Because of the central position of occupational roles in American society, changes in these roles typically generate changes in other roles, such as family and community roles. We expected, therefore, that adding new nonfarm jobs to Monroe County would produce some changes in group membership and leadership as well as in the relative importance and composition of various groups in decision making. In general, we expected that groups oriented toward occupational activities would be most immediately affected and would experience the most change but, because of the interconnections among groups within a community, many other groups would also be affected.

Formal Organization Participation

By increasing the level of commercial and occupational activity, industrial expansion tends to stimulate formal organizational activity. It may also produce changes that have the opposite effect. For example, by encouraging migration, it can increase the proportion of persons new in their communities who have had their social ties temporarily disrupted or broken. For these reasons, measures of social participation for the sample population may reflect the influence of opposing forces on participation rates and thus obscure specific trends. The median number of formal group memberships per head of household, for example, changed relatively little in either county between 1957 and 1962. This number declined from 2.25 to 1.92 in Monroe and increased from 2.04 to 2.09 in Noble County. Median total social participation score[7] for heads of households, however, declined substantially in Monroe County (from 4.04 to 3.04) and was virtually unchanged in Noble (from 3.23 to 3.22).

The decline in median number of organization memberships and median social participation scores in Monroe County resulted primarily from increases in the proportions of respondents with no memberships in formal organizations or only one membership (Table 68a). The proportion with no memberships increased from 15.7 percent in 1957 to 20.2 percent in 1962 and the proportion with only one membership increased from 28.4 to 32.8 percent. There were compensating declines in the proportions with two or more memberships. In Noble County, there was also an increase in the proportion with no memberships, (from 16.9 to 25.9 percent) but, in contrast to Monroe County, there was an increase in the proportions with one membership and little change in proportions with more than one membership.

On the surface, these changes would indicate that the forces depressing formal social participation were greater in Monroe County than in Noble County. However, the further examination of the data revealed two trends which reflect the impact of industrial development in Monroe County--changes in participation by characteristics of the persons and changes in participation by type of organization. The former involved the selectivity of migration initiated by industrial expansion and the latter involved the change in emphasis on different kinds of organizational activity.

7/ This score or index was derived by assigning 1 point for membership, 1 point for regular attendance at meetings and 3 points for each office or committee chairmanship held and summing the total for each person.

Table 6a. Number and Percent of Heads of Households by Number of Organizations They Belong to.

Number of Memberships	Monroe County 1957 No.	Monroe County 1957 Pct.	Monroe County 1962 No.	Monroe County 1962 Pct.	Noble County 1957 No.	Noble County 1957 Pct.	Noble County 1962 No.	Noble County 1962 Pct.
None	89	15.7	119	20.2	56	16.9	69	25.9
One	161	28.4	193	32.8	106	31.9	59	22.2
Two	129	22.8	111	18.9	69	20.8	54	20.3
Three	71	12.5	71	12.1	45	13.6	36	13.5
Four	43	7.6	45	7.7	29	8.7	23	8.6
Five and over	73	12.9	49	8.3	27	8.1	25	9.4
No answer	41	----	0	----	0	----	2	----
TOTAL	607		588		332		268	
N	566	99.9	588	100.0	332	100.0	266	99.9

We have already noted that industrial expansion in Monroe increased migration within the county and probably caused some migration into the county. Some of the intra-county moves would not be far enough to disrupt community ties but some would. Most of the intercounty moves would probably do so. Classification of respondents into newcomers (persons who had moved into the county during the period 1957 to 1962) and old-timers (persons who had lived in the county more than 5 years) provided a rough separation of those who had experienced breaks in community ties from those who had not. Median numbers of memberships, median numbers of officers and median social participation scores for these two groups indicate that newcomers in both counties belong to fewer organizations and held fewer offices than did old-time residents (Table 69). Since the proportion of newcomers was higher in Monroe than in Noble, the impact of this factor on average participation rates for the total population of households was greater in Monroe than in Noble County. On one measure of social participation, however, newcomers in Monroe County had a higher median score. This was the index of total social participation. This would indicate that, although newcomers in Monroe belong to fewer organizations, they were more active in attendance at the meetings of organizations to which they belonged than were old-timers.

Since the deficiency in social participation of newcomers in comparison with old-timers was greater in Noble than in Monroe County, the trend in participation

Table 69. Median Number of Organization Members, Median Number of Offices Held and Median Total Social Participation Scores by Length of Residents in the County for Monroe and Noble Counties, 1962.

Social Participation Measure	Monroe		Noble	
	Old Timers (5 or more years)	Newcomers	Old Timers (5 or more years)	Newcomers
N	501	75	233	33
Number of organization memberships	2.06	1.98	2.19	1.75
Number of offices held	0.62	0.59	0.65	0.55
Total social participation score	2.96	3.92	3.65	2.56

Table 70. Median Number of Organization Memberships, Median Number of Offices Held and Median Total Social Participation Scores of Heads of Households in Both Surveys.

Social Participation Measure	Monroe		Noble	
	1957	1962	1957	1962
Number of organization members	2.42	1.92	2.29	2.34
Number of offices held	0.64	0.63	0.65	0.68
Total social participation score	4.40	3.04	4.24	4.01

rates among old-timers must have been different in the two counties. Although the people who were in both surveys did not include all of the people who were classed as old-timers, they constituted a majority of this class and provided an opportunity to note the changes in the nonmigrant part of the population. These data indicate that the more permanent residents of Monroe County reduced their social participation levels during the 5-year study period on all three measures (Table 70).

The reduction in median number of memberships and in total social participation scores was substantial. The former declined from 2.42 to 1.92, and the latter declined from 4.40 to 3.04. Median number of offices held declined only

slightly. In contrast, the median number of organization memberships and the median number of offices in Noble County increased slightly (2.29 to 2.34 and 0.65 to 0.68), while total social participation scores declined moderately (4.24 to 4.01). If the industrial expansion in Monroe County stimulated any increase in formal organizational activities among long-time residents, it is not reflected in these data.

The hypothesis that industrial expansion would stimulate organizational activity was based in part on the assumption that industrial expansion would increase the proportion of professional and managerial workers in the labor force. Primarily, because the plant was located nearly 20 miles from the only established population center of any size in Monroe County and near an urban center across the Ohio River in West Virginia, these new plants did not increase the proportion of professional and managerial workers in the Monroe County labor force. In fact, they had the opposite effect (see Table 25). Most of the new workers in these categories were not residents of Monroe County. Instead of locating in Monroe, they lived across the river in West Virginia, which was more convenient to the plant and provided a more urban environment than the little villages near the plants on the Ohio side of the river or the county seat of Monroe County. This meant that Monroe County did not benefit as much as might have been expected from the stimulating effects of the leadership of new people in the professional, technical and manager class which usually accompanies industrial expansion. This is verified by the data on participation rates of persons in different occupations.

The proportion of all organizational memberships held by persons in the professional, managers, officials, and proprietors class increased in both counties, and it increased substantially more in Noble than in Monroe (Table 71). On the other hand, the proportion of memberships held by craftsmen and operatives increased substantially in Monroe (from 26.8 to 35.0 percent) and declined slightly in Noble (from 40.7 to 38.6 percent).

Most of the change in organizational memberships held by professional, et al and the craftsmen-operatives classes was due to change in their proportional

Table 71. Percent of all organization memberships held by nonfarm heads of households by occupational class in Monroe and Noble Counties, 1957 and 1962.

Occupational Class	Monroe		Noble	
	1957	1962	1957	1962
Professional Manager, official, and proprietor	31.9	33.6	13.5	27.5
Clerical and Sales	6.8	6.9	7.3	2.2
Craftsmen and Operatives	26.8	35.0	40.7	38.6
Service Workers	2.4	8.0	2.4	3.2
Laborers	11.7	15.6	5.2	8.6

Table 72. Trends in percent of employed heads of households in the professional et al., and in the craftsmen-operatives categories, percent of organizational memberships held and number of memberships per head of household in these two categories, Monroe County, 1957-1962.

Occupational Class	Percent of Employed heads of households		Percent of memberships held		Memberships per person	
	1957	1962	1957	1962	1957	1962
Professional, et al.	18.3	21.9	31.9	33.6	4.41	3.29
Craftsmen and Operatives	30.4	47.1	26.8	35.0	2.22	1.59

Table 73. Percent of all offices and committee chairmanships held by nonfarm heads of households by occupation in Monroe and Noble counties, 1957 and 1962.

Occupational Class	Monroe		Noble	
	1957	1962	1957	1962
Professional Manager, official, and proprietor	44.7	36.7	23.2	27.4
Clerical and Sales	13.1	8.2	6.6	3.2
Craftsmen and Operatives	15.8	39.7	34.7	30.6
Service Workers	4.6	8.2	2.5	1.6
Laborers	1.7	7.1	0.0	4.8

representation in the labor force (Table 72). The number of memberships per person was approximately twice as high among the professional, et al, class as among craftsmen and operatives and, although the ratio declined for both classes, their relative positions remained the same. The principal difference was in their proportional representation in the labor force.

The number of offices held provides a more sensitive measure of stimulus to organizational activities, since it reflects the distribution of leadership positions. The proportion of all offices and committee chairmanships held by persons in the professional, et al, class declined in Monroe County but increased in Noble County between 1957 and 1962 (Table 73). At the same time, the proportion of offices held by craftsmen and operatives increased in Monroe and declined in Noble County.

In contrast to the situation with regard to organizational membership, only part of the change in the proportion of offices held by these two occupational groups resulted from changes in the distribution of the employed population by occupational group. Part of it also resulted from a change in the number of offices held per person. While the proportion of employed heads of households in the professional et al, category in Monroe County increased from 20.9 to 22.9, the proportion of offices held by heads of households in this category decreased from 44.7 to 36.7. Thus, the number of offices per person in the professional category declined (from 0.86 to 0.54). The proportion of employed heads of households in the craftsmen and operatives category increased from 36.0 to 47.0 percent but, in contrast to the professional category, the proportions of offices held by craftsmen and operatives increased. Furthermore, they increased more rapidly than did the proportional representation of craftsmen and operatives in the employed population. Consequently, the ratio of offices per person, though much lower than for professionals, increased for the craftsmen and operatives category during the study period (see Table 74).

Table 74. Trends in percent of employed heads of households in the professional and managerial and the craftsmen and operatives categories, percent of offices held and number of offices per employed head of household in these two categories, Monroe County, 1957-1962.

Occupational Class	Percent of employed heads of households		Percent of offices held		Offices held per person	
	1957	1962	1957	1962	1957	1962
Professional, et al.	18.3	21.9	44.7	36.7	0.86	0.54
Craftsmen and operatives	30.4	47.1	15.8	39.7	0.18	0.28

Although heads of households represent only about 60 percent of the employed population, it is reasonable to assume that these figures are reliable representations of the trends in proportions of the employed population and of trends in the rate of office holding in each category. We would conclude, therefore, that industrial expansion reduced organizational activity in Monroe County by changing the occupational distributions of the labor force; i.e., by increasing the proportional representation in the labor force of blue-collar workers, particularly craftsmen and operatives who tend to have low participation rates, and by reducing the proportional representation of white-collar workers, particularly professionals who normally have high participation rates. Since the expected increase in social participation levels was based on an assumption that industrialization would increase the proportional representation of an organizationally active part of the labor force, the professional and managerial category, the effect was the opposite. It should be noted, however, that participation rates among craftsmen and operatives increased during the study period. This no doubt indicates that the added persons in this category were younger and better educated than the original component. It may also reflect an increase in social responsibility associated with improvement in income levels and social status for people in this category.

Changes in Participation in Various Types of Organizations

It was expected that some changes would occur in the relative importance of different organizations. We looked for evidence of this in the kinds of new groups organized, in trends in the number of organizations of different kinds, in trends in the number of memberships in different kinds of organizations, and in trends in the kinds of organizations reported by respondents as taking the lead in getting things done in the county or the local community.

An intercounty comparison of the number and kinds of new groups organized during the study period was not possible because these data were only obtained for Monroe County. Information from a systematic 50 percent sample of all voluntary organizations with local headquarters in the county seat town in 1962 provides an indication of the direction of trends in emphasis for Monroe County.

An estimated 30 percent of the organizations headquartered in Woodsfield, the county seat of Monroe County, was organized in 1956, the year construction began on the plants, or later. This is a relatively high rate of formation of new formal groups. As expected, proportionally more of the new organizations were in the categories concerned with occupational activities; i.e., more of the new groups were concerned with industrial or business affairs than were concerned with the traditional areas of formal organizational concerns--schools, churches, or fraternal affairs. The 50 percent sample contained 34 organizations, 10 of which were new since 1956. Of the 14 organizations concerned primarily with business or occupational affairs, 6 were organized in 1956 or later. In contrast to this, of the 20 other organizations, only 4 were organized in 1956 or later.

Data on trends in membership for these 34 groups indicate that business and occupationally related organizations were somewhat more likely to increase in membership than other organizations. Of those reporting a change in membership between 1957 and 1962, a larger proportion of business-related organizations reported increases. This difference was small (4 in 7 compared with 8 in 15), but it might have been much larger except for the fact that most of the churches reproted increases. The period 1957 to 1962 was a period of growth for churches generally. Six of the eight nonbusiness-related organizations reporting increases were churches.

The data on these 34 organizations underestimate the shift in organizational emphasis to those groups concerned with occupationally related concerns because no labor unions were located in the county seat. Thus, the increase in labor union membership is not reflected in these data. Social participation scores of sample heads of households indicate a substantial increase in participation in labor unions during the study period.

Two additional kinds of data provide information on the impact of the new industrial plants on memberships in different kinds of organizations in Monroe County. A comparison of the median social participation scores for participation in specific kinds of organizations by newcomers versus old-timers provides an indication of the general effects of population change associated with industrial expansion and changes in organizational activities made by plant employees, because the plant jobs provide evidence of specific effects.

In general, newcomers to the county had lower median social participation scores than old-timers (see above). But when participation scores for different

Table 75. Median Social Participation Scores in Various Types of Organizations by Length of Residence in Monroe County, 1962.

Type of Organization	Lived in County	
	Five or More Years	Less Than Five Years
School Organizations	0.57	0.60
Church Participation	2.24	2.06
Farm Organizations	0.59	0.56
Fraternal	0.59	0.65
Service Organizations	0.51	0.51
Veterans Organizations	0.57	0.58
Government Agency Organizations	0.52	0.20
Business, Professional and Labor Organizations	0.59	0.75
Other Organizations	0.55	0.54

types of organizations were examined, it was found that, although scores for newcomers were lower or not significantly different from scores for old-timers in most types of organizations, they were higher for one particular category of organizations. This was the category that included business, professional, and labor organizations. The median score for newcomers was nearly 30 percent higher than for old-timers in this category of organizations (Table 75).

Among the plant employees interviewed, the majority made no change in their organization memberships because of the plant job. Of those reporting change, the proportion increasing organization membership was only slightly larger than the proportion decreasing. There were important changes, however, in the kinds of organizations to which they belonged. The effect of these changes was to increase the number of memberships in organizations concerned with occupational roles, in this case labor unions. Twenty-four memberships were added and 20 were dropped. Nineteen of the 24 added memberships were labor unions and only 11 of the 20 organizations dropped were labor unions. Thus, the net increase in labor union memberships was 8 for the 66 plant employee respondents who answered these questions.

Changes in the Groups Identified as Most Active

Respondents were asked to indicate first which groups and/or persons had most frequently taken the the lead in getting things done in the county and secondly which groups and/or persons had most frequently taken the lead in getting things done in the local community. The groups mentioned are considered first, since they provide some additional information on changes in the relative importance of different kinds of organizations. Responses varied over a wide range of specificity. Some of the groups named were not formally organized groups but were general categories or classes of people. It was not possible, therefore, to make a classification by type comparable to the classification used in computing social participation scores. However, it was possible to note the relative frequency of groups concerned with business and occupational affairs compared with others. Only the data for groups mentioned by two or more respondents are presented in Tables 76 and 77.

Seven groups were mentioned by two or more respondents as taking the lead in getting things done in Monroe County, and eight were mentioned in Noble County in 1957 (Table 76). In both counties, chambers of commerce or businessmen's groups and farm organizations were the most frequently mentioned groups, with the proportions mentioning each quite similar. Farmers' groups ranked first in Monroe, while chambers of commerce or businessmen's groups ranked first in Noble. Although the list did not differ greatly in length or in the top ranking category, they differed in composition. Rural development committees and school groups were mentioned in Monroe and not in Noble, while veterans' groups, extension groups, and lodges or fraternal groups were mentioned in Noble and not in Monroe. Although the rural development committee in Monroe was a departure from the usual extension type group activity, it was extension-sponsored and, if included as an extension group, the lists for each county were quite similar in 1957.

Between 1957 and 1962, changes occurred in both the composition of the lists of groups and in the relative frequency with which various groups were mentioned. In general, the list of "leader" groups expanded in both counties indicating some diffusion of leadership and organizational responsibility. The expansion was greater in Monroe than in Noble County. The list increased from 7 to 19 in Monroe but only from 8 to 12 in Noble.

The most significant intercounty difference in trends, however, was the difference in trends in the relative proportion of respondents naming various groups as the groups that take the lead in getting things done. In Monroe County, civic and service groups were mentioned with the greatest frequency, farm organizations were second, and chambers of commerce or business were third. The increased importance of civic and service groups is largely accounted for by a newly organized junior chamber of commerce, which was included in this category. If civic and service organizations and chambers of commerce and businessmen are combined, we see that there was a substantial shift of county leadership functions to groups composed primarily of businessmen and away from farm organizations in Monroe. In contrast, the relative importance of the principal categories did not change in Noble County, indicating a fairly stable pattern of leadership throughout the study period. No community development groups appeared on the list from either study in Noble, suggesting that relatively little attention was being directed to problems of community development by organized groups of people.

When the question about which groups were most active in getting things done was asked with reference to the respondents' home community which for most respondents was an area smaller than the county, a quite different distribution of

Table 76. Types of groups reported by two or more respondents as taking the lead in getting things done in the county.

Types of Groups Reported	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
Civic and service organizations	47	7.8	126	21.5	25	7.5	17	6.3
Farm organizations	72	11.9	61	10.4	74	22.2	28	10.5
Chamber of Commerce and businessmen	64	10.5	52	8.8	87	26.2	50	18.6
County Rural Development Committee	27	4.5	38	6.5	--	--	--	--
School related groups	23	3.8	32	5.5	--	--	4	1.4
Church groups	41	6.8	19	3.2	14	4.2	12	4.5
County Officials	52	8.6	17	2.9	18	5.4	2	0.7
Switzerland of Ohio Association	--	--	17	2.9	--	--	--	--
Veterans groups	--	--	13	2.2	8	2.4	2	0.7
Women's groups	--	--	12	2.0	--	--	--	--
Youth groups	--	--	12	2.0	--	--	27	10.1
Extension Service groups	--	--	11	1.8	7	2.1	13	4.8
Lodges and fraternal groups	--	--	8	1.3	6	1.8	3	1.1
Red Cross	--	--	5	0.9	--	--	--	--
Political organizations	--	--	4	0.7	--	--	--	--
Volunteer firemen	--	--	4	0.7	--	--	7	2.6
Hospital Development Committee	--	--	2	0.3	--	--	--	--
Ministers groups	--	--	2	0.3	--	--	--	--
Township Trustees	--	--	2	0.3	--	--	--	--
Professional	--	--	--	--	--	--	2	0.7
TOTAL	326	53.9	437	74.2	239	71.8	167	62.0

answers was obtained. In contrast to the leadership pattern for county-wide affairs, there was substantially more diffusion of leadership functions for community affairs in both counties. This was indicated by the greater dispersion of choices. The distribution of leadership functions also showed less inter-county difference and were more stable over time. Although businessmen's groups were among the most important at both points in time, they did not increase substantially in importance during the study period in either county. The concentration of initiative in getting things done which occurred at the county level in Monroe did not occur at the community level (Table 77). This suggests that most of the changes in power structure associated with the industrial expansion occurred on the county level.

Farm organizations, church groups, and school-related groups were among the top ranking categories in both counties and, with the exception of school groups, remained near the top during the study period. School groups lost leadership in Noble County in 1962 and were replaced by youth groups (4-H Clubs) as one of the four most frequently mentioned.

The number of different categories of groups mentioned was larger in 1962 than in 1957, but the increase was proportionally not very much greater in Monroe than in Noble County. The number increased from 9 to 17 in Monroe and from 6 to 10 in Noble. There was, however, some suggestion that the influence of industrial expansion was being felt at the community level in the fact that there was a trend toward concentration of leadership in the civic and service organizations and community development groups which are more action oriented than the traditional chamber of commerce groups or church and school groups.

Tables 78 and 79 present the results of the second half of the pair of questions about which groups and/or persons have taken the lead in getting things done. Since the question did not require that the answer be in terms of a specific person, some respondents answered with an office or a position, such as mayor or minister, and some even answered with a more general category of persons, such as businessmen or housewives. Thus, there is some overlap between the responses to the second part of the two questions and the previously discussed first part which concerns organizations or groups which have taken the lead in getting things done. Since the concern here was to determine the general trends in leadership and decision making and not the specific membership of a power structure, this was not considered a serious limitation of the data.

The lists of persons taking the lead in getting things done in the county reflect some important changes in the public image of the pattern of leadership in both counties but the changes in Monroe were the most marked. In 1957, persons in elective positions were most often mentioned as being the people who got things done in the county. The county superintendent of schools and the school board composed the category named most frequently, county representatives to the State Legislature were second, extension agents and ministers were tied for third, and businessmen were in a three-way tie for fifth. Others in this three-way tie were sheriffs, teachers and other county officials.

In 1962, however, businessmen were mentioned more frequently than all other categories. The increased activity in community development programs required major contributions to leadership by lay leaders. This responsibility apparently devolved principally upon businessmen and, as the programs developed, businessmen were recognized as the active leaders. As Table 78 shows, businessmen were named by more than 25 percent of all respondents and by more than 50 percent of all respondents who named persons as being leaders in the county in 1962.

Table 77. Types of Groups Named as Getting Things Done in the Local Communities for Monroe and Noble Counties

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
Civic and Service Organization	49	8.0	54	9.2	--	--	--	--
Chamber of Commerce and Businessmen	60	9.8	23	4.2	51	15.3	26	9.7
Church Groups	47	7.7	53	9.0	23	6.9	25	9.3
Farm Organizations	65	10.7	49	8.3	47	14.1	16	6.0
School Related Groups	51	8.4	46	7.8	23	6.9	5	1.8
Volunteer Firemen	--	--	29	4.9	--	--	9	3.4
Community Development Groups	--	--	21	3.4	--	--	--	--
Township Trustees	23	3.8	20	3.4	7	2.1	3	1.1
Women's Groups	21	3.5	16	3.0	--	--	--	--
Youth Groups (largely 4-H)	--	--	13	2.2	--	--	21	9.3
Veterans Groups	--	--	11	1.9	13	3.9	3	1.1
Town Council	27	4.5	9	1.5	--	--	--	--
Extension Groups	15	2.5	8	1.4	--	--	3	1.1
Lodges and Fraternal Groups	--	--	7	1.2	--	--	2	0.7
County Officials	--	--	3	0.5	--	--	--	--
Athletic Groups	--	--	2	0.3	--	--	--	--
Garden Clubs	--	--	2	0.3	--	--	--	--
TOTAL	358	58.9	366	62.5	164	49.2	116	44.6

The number mentioning extension agents also increased. Extension agents were second in order of frequency mentioned and county officials were third. The county superintendent of schools and the school board had dropped to sixth place. That part of the change in leadership patterns represented by the decline

Table 78. Types of Persons Taking the Lead in Getting Things Done in the County.

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
Businessmen	8	1.3	151	25.7	--	--	22	8.1
Extension Agents	22	3.6	43	7.4	13	3.9	29	10.8
County Officials	9	1.5	31	5.1	5	1.5	--	--
County Representatives	36	5.9	14	2.4	46	13.9	7	2.6
Attorneys and Judges	--	--	13	2.2	--	--	--	--
County Supt. & School Board	38	6.3	5	0.9	12	3.6	--	--
Housewives	--	--	4	0.7	--	--	2	0.7
Soil Conservation Aids	--	--	4	0.7	--	--	--	--
Sheriffs	8	1.3	3	0.5	9	2.7	--	--
Mayors	--	--	2	0.3	--	--	--	--
Ministers	22	3.6	2	0.3	6	1.8	--	--
Plant Employer	--	--	2	0.3	--	--	--	--
Teachers	8	1.3	--	--	--	--	--	--
Congressman	--	--	--	--	7	2.1	--	--
Farmers	--	--	--	--	--	--	8	2.9
County Engineer	--	--	--	--	--	--	2	0.7
TOTAL	151	24.8	274	46.5	98	29.5	70	25.8

in rank of the superintendent of schools and the school board was, no doubt, due to a change in the situation regarding schools which was related to the expansion of industry but in a more superficial and transitory manner than many of the other changes. At the time of the first survey, the county was facing some major problems of school consolidation and school relocation. The construction work on the new plants contributed to these problems because it required the relocation of one school in the eastern part of the county. Most of the school problems were settled, however, early in the study period.

The fact that the shift to dependence on businessmen for county leadership

was much more pronounced in Monroe County than in Noble County is evidence of the impact of industrial expansion on leadership patterns in Monroe. Officials of various kinds were listed as the important leaders in Noble County in 1957, much as they were in Monroe County. By 1962, extension agents and businessmen had increased some in importance, but the change was much less pronounced than in Noble County. Furthermore, one man, a publisher who was interested in development, received half of the businessmen's nominations. There was no significant increase in the recognition of businessmen in general as an important action group in Noble County.

The two counties also differed in leadership dispersion patterns. Eight different types of leaders were listed in Monroe County in 1957 and this number increased to 12 in 1962. In contrast, the number of different types declined in Noble County from 7 in 1957 to 6 in 1962. There was no evidence of a concerted effort at community development in the responses of the Noble County sample, i.e., no leadership titles were identified which suggested emphasis on community development as occurred in Monroe County.

In 1957, 6.6 percent of the respondents in Monroe County named ministers as the important action leaders at the local level. This was the most frequently mentioned type. Next in line were the mayors, county representatives, teachers, businessmen, and township trustees, in that order. Only these six types of leaders were named by two or more respondents. In 1962, the number of different types of leaders had expanded to 15, with county officials, farmers extension agents, attorneys, postmasters, managers or foremen, housewives and laborers added to the list, but there was a much greater concentration of nominations for one type, businessmen. Businessmen received 16.5 percent of the nominations in 1962. Ministers who ranked first in 1957 received less than 1 percent of the nominations in 1962, mayors 1.2 percent, and teachers 1.0 percent. This suggests that, although ministers had taken the lead in the early part of the period and were probably instrumental in instigating much social action and development which occurred in the various communities of Monroe County, as action programs got underway businessmen became the active leaders and ministers receded into the background.

In Noble County, ministers were also mentioned most often in 1957 as persons who took the lead in getting things done. They were followed, in order of frequency, by county representatives, teachers, and the justice of the peace. Only these four types of leaders were mentioned by two or more respondents. By 1962, the leadership was more diffused with eight types of leaders listed--businessmen, farmers, a publisher, a fire chief, the county superintendent, housewives, and a person representing the aid to the aged were added and teachers, county representatives, and the justice of the peace were dropped. There was no concentration of nominations for any one type as in Monroe County. Businessmen were mentioned by 5.2 percent of the respondents, but half of these were nominating the same individual, a publisher who was interested in development. Farmers were listed second with 4.7 percent. Fire chief was third with 2.6 percent. No others received as much as 2 percent.

The shift of leadership from elected officials, ministers, and extension agents to businessmen in Monroe illustrated the changes which accompany successive

stages in a social action program. Persons who see community problems and take the lead in creating awareness of them do not necessarily continue as leaders through all the phases of a social action program. They are important in the initiation stage but when the community finally reaches the action stage, it is necessary for persons in positions of power sufficiently important to legitimize the action to be involved. These are not necessarily the same persons who begin the process by stirring up awareness of a need. In the case of Monroe County, the ministers and extension agents serve as initiators of discussion. But when the action stage was reached, it was the lay group of businessmen who legitimized the program and were recognized as the leaders.

DIRECT EFFECTS OF THE NEW PLANTS ON LEADERSHIP AND ORGANIZATIONAL ACTIVITIES

To observe several aspects of the direct impact of the industrial expansion on the organizational structure of the experimental county, a supplemental survey of a 50 percent sample of all the various voluntary organizations in the county seat of Monroe County was made. This survey has already been referred to in the discussion of changes in the importance of various types of organizations. It provides some additional information on the effects of the new industry on the power structure. For evidence of these effects, data on the number of officers in each organization who were plant employees and the opinions of representatives of the organization regarding the effect of the new plants on the membership of their groups were examined.

Nearly 45 percent of the organizations headquartered in the county seat reported that one or more of the officers were employees at one of the new plants (Table 79). This proportion would probably have been larger if the plant had not been located so far from the county seat.

When asked to estimate the effect that the new plants had on their total membership, 14 respondents or 39 percent indicated that there had been an increase in the size of membership in their organization due to the plants. Eleven respondents or nearly 31 percent indicated that there had been some decrease and only two or 6 percent reported no effect.

Table 80 shows the respondents' estimates of the effect of the aluminum plant on the proportion of their membership from various occupational groups. Seven respondents or 20 percent reported that there was an increase in the number of their members from the professional, proprietor, and manager occupations in their organization. Thirteen respondents or 36 percent reported an increase in clerical and skilled workers. Unfortunately, response categories provided for the interviewers grouped clerical workers and skilled workers or craftsmen and operatives together so they could not be separated in this analysis. Seven respondents or 20 percent reported an increase in other types of workers, including laborers and unskilled workers. Five respondents reported a reduction in the number of farmers. Data on change in the labor force composition and proportion of organization memberships held indicate that most of this increase was accounted for by craftsmen and operatives.

Summarizing the evidence on social participation, it can be said that the benchmark hypothesis that "leadership in formal organizations will become less concentrated" was only partially supported. Although there was some increase in the

Table 79. Number of officers in each organization that were employees at one of the new plants.

Number of Officers	Frequency	Percent
None	20	55.6
One	3	8.3
Two	4	11.1
Three	3	8.3
Four	3	8.3
Five	1	2.8
All	2	5.6
TOTAL	36	100.0

Table 80. Opinion of the organization leaders of Woodsfield as to the plant effect on proportion of membership in each occupation group.

Occupation Groups	Increase		Decrease		No Change		Don't Know No Answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Professionals, Proprietors and Managers	7	19.4	1	2.8	26	72.2	2	5.6	36	100.0
Clerks and Skilled workers	13	36.1	0	--	19	52.8	4	11.1	36	100.0
Farmers	0	--	5	13.9	25	69.5	6	16.6	36	100.0
Other workers	7	19.4	1	2.8	23	63.9	5	13.9	36	100.0

variety of persons represented, there was a definite concentration of leadership in county and community affairs. On the other hand, there was a definite increase in the number of different organizations taking a lead in community action and definite evidence of shifts in leadership which would support the benchmark hypothesis that "more power groups will evolve and leadership functions will shift to new groups." This expectation was further confirmed by the larger number of

organizations that evolved as leading groups and by the shift in relative importance from the traditional organization, church, school, and local government to the newer action groups, such as civic and service groups and community planning and development groups. This shift included an increase in the participation of lay leaders in their communities' concerns. A large proportion of these laymen were businessmen. No doubt this shift was also partly due to the rural development program which actively recruited leadership for community action programs during this period.

A third hypothesis regarding power structure was that "newcomers to Monroe County will assume leadership positions formerly held by old-timers." This hypothesis is only partially substantiated by the data on the proportion of local organizations with officers who were employed at the new aluminum plant. If more of the residents in the county had been employed at the management and white-collar level, more of this effect would have occurred.

INFORMAL SOCIAL ORGANIZATION

Informal social organization is defined as a system of interaction of people outside of organized groups. In this study, observations of this type of interaction were largely confined to observations of visiting patterns among the respondents. Informal interaction may be equally important in the function of the community as interaction in formal groups, since it is through the informal contacts of people that much information is diffused and ideas are transferred which form the basis of decision making. Decisions among the leaders of formal groups are often formulated in the intimate informal discussion rather than in the formal discussions of organized groups.

Assuming that expansion in the number and variety of jobs would tend to expand the range of informal visiting contacts, we looked at change in visiting patterns for evidence of the impact of industrial development in Monroe County. We hypothesized that the geographic range of informal visiting would increase--that people would increase the amount of non-local or non-neighborhood visiting as a consequence of meeting new people from other neighborhoods on the job. We also hypothesized that informal social participation with family and kin would decrease in importance and be replaced by more participation in formal and nonkinship associations.

Table 81 is a summary tabulation of informal visiting patterns in the Monroe and Noble counties. In Monroe County, more than 89 percent of the respondents reported they visited with other people in 1957 and 86.7 percent reported visiting in 1962. The average number of visits per month also declined from 5.3 to 4.6 visits. The average number of families visited or neighbored with per year increased, however, from 10.5 to 12.2.

To determine the extent that kinship was a factor in visiting, the respondents were asked how many of the families visited were relatives. In Monroe County, the number of relative families visited averaged 2.9 in 1957. This number increased to 4.9 in 1962. The increase in number of related families visited exceeded the increase in total number of families visited.

An estimate of the geographic distribution of visiting was obtained from response to questions about distance to the nearest and the farthest family with

Table 81. Summary of informal visiting patterns of households in Monroe and Noble counties, 1957 and 1962.

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Number of respondents who go visiting	541	89.1	510	86.7	301	90.7	236	88.1
Average number of families neighbored with per year	10.5		12.2		14.5		12.6	
Average number of families related to household members neighbored with per year	2.9		4.9		4.3		5.2	
Average distance to nearest visits by respondents (miles)	0.0		2.3		1.2		1.6	
Average distance to farthest visits by respondents (miles)	10.8		21.3		15.4		22.7	
Mean number of visits per month	5.3		4.6		5.5		5.2	

whom respondents visited. The average distance to the nearest families visited was slightly less than 1 mile in 1957 and in 1962 it was 2.3 miles. Likewise, the average distance to the farthest families visited increased from 10.8 miles in 1957 to 21.3 miles in 1962. This increase in average distance traveled for visiting indicates an extension of the systems of informal interaction and communication over a wider geographic area and a larger population. It could, however, also indicate a greater selectivity of visiting with much less reliance on the immediate neighborhood for visiting partners.

In Noble County, the patterns of change were generally similar but there were some exceptions. The percent of the respondents reporting that they visited was 91 percent in 1957 but declined to 88 percent in the restudy. The average number of visits per month also declined but less than it did in Monroe County. The average number of families visited per year was considerably higher in Noble County than in Monroe County in 1957. The latter declined, however, from 14.5 in 1957 to 12.6 in 1962, which made it about the same as the Monroe County average in that year.

The average number of relative families visited was 4.3 percent in 1957 and 5.2 percent in 1962. The change was in the same direction as in Monroe County, but the averages were higher for Noble County than for Monroe County at both points in time.

Average distance to the nearest family visited was slightly over 1 mile in Noble County in 1957 and showed only a small increase to 1.6 miles in 1962. The average distance to the farthest family was 15.4 miles in 1957, which was considerably higher than the 1957 average in Monroe County. Although this distance increased in Noble just as in Monroe, it did not increase as much. It was 22.7 in 1962, which was only about 1½ miles more than the comparable figure for Monroe County.

The patterns of change in most of the items in Table 81 indicate that the changes which were currently occurring in Monroe County had occurred earlier in Noble County. Trends were either in different directions, with the counties moving closer together in 1962, or they were in the same direction with Monroe changing more and thus moving closer to Noble County. Both types of changes caused a convergence in the characteristics of the county. In all but one instance (average number of families visited), the amount of change was greater in the experimental county than in the control county. This corroborated other evidence that urbanizing influences had affected Noble County earlier than Monroe County.

The benchmark hypothesis that "informal visiting will take place over a wider geographical area" was definitely supported but the hypothesis that "informal social participation with family and kin will decrease in importance and will be replaced by more formal participation and nonkinship associations" was not supported. In fact, an opposite tendency was indicated in both counties. The increase in the average number of kin-families visited was greater than the increase in the average of all families visited in Monroe, while in Noble County the average number of kin-families visited increased and the average number of all families visited declined.

PATTERNS OF LEISURE ACTIVITIES

To understand more fully the extent of change in various aspects of life in an industrializing rural area, several questions were asked about leisure time activities. An important concomitant of industrialization is an increasing separation of work from nonwork activities and an increasing recognition of leisure time and leisure time activities. Leisure time activities observed in this study were: vacations, particularly vacations involving trips away from home; hunting and fishing; hobbies; attending movies; watching television; reading; and sports.

Vacations

Respondents were asked whether or not they took a vacation or voluntarily took time off from work during the previous years and whether this vacation included one or more nights away from home. Table 82 shows that in Monroe County there was no change between 1956 and 1961 in the proportion taking a vacation. In both years, one-third of the respondents reported that they had taken a

vacation. The proportion spending one or more nights away from home decreased slightly from 28.5 percent in 1956 to 24.8 percent in 1961. If the change in proportion taking vacations involving trips away from home indicates a trend, the trend is in a direction opposite to that expected in an area undergoing urbanizing influences.

In Noble County, the control area, the proportion taking a vacation was smaller but the direction of change during the study period was what would be expected in an area undergoing industrial expansion. The proportion increased from 24.4 to 29.5 percent. The proportions staying one or more nights away from home also increased slightly from 18.4 percent in 1956 to 19.8 percent in 1961.

Table 82. Number and percent of respondents who took a vacation in 1956 and in 1961.

	Monroe County				Noble County			
	1956		1961		1956		1961	
	No.	%	No.	%	No.	%	No.	%
Yes	199	32.8	193	32.8	81	24.4	79	29.5
No	406	66.9	395	67.2	241	72.6	187	69.8
No Answer	2	.3	0	0.0	10	3.0	2	.7
Total	607	100.0	588	100.0	332	100.0	268	100.0
Vacation which included one or more nights away from home.	173	28.5	146	24.8	61	18.4	53	19.8

Hunting or Fishing

In some rural areas, hunting and fishing are scarcely recognized as leisure time activities. They are done but often as a part of a work activity or in connection with a work activity, such as preparing fire wood or fixing fence. In more urban areas, however, hunting and fishing are more frequently considered leisure time activities and for most people involve a trip and are part of one's vacation. Although nearly half of the respondents in both counties said they went hunting and fishing, only a small part of them indicated that these activities were a part of their vacation. Hunting and fishing in this area were largely local activities.

More respondents in Monroe County reported hunting and fishing as part of their vacation than in Noble County and the proportion increased very slightly between the beginning and the end of the period (from 8.6 to 8.7 percent). In contrast, the percent declined in Noble from 6.4 to 4.5 but the differences were

not large enough to be considered very significant. The proportions going hunting and fishing but not as part of their vacation increased from 36 percent in Monroe at the beginning of the study period to 41 percent at the end and remained unchanged at 43.0 percent in Noble County. The increase in local hunting and fishing activities in Monroe County is the opposite of the effect expected from the urbanizing influence of expanded industrial employment.

Table 83. Number and Percent of Respondents Who Said They Went Hunting or Fishing in 1956 and 1961.

	Monroe County				Noble County			
	1956		1961		1956		1961	
	No.	%	No.	%	No.	%	No.	%
Yes, as part of my vacation	49	8.6	51	8.7	21	6.4	12	4.5
Yes, but not as part of my vacation	207	36.3	241	41.3	141	43.0	114	43.0
No	314	55.1	291	49.9	166	50.6	139	52.5
TOTAL	570	100.0	583	99.9	328	100.0	265	100.0
Not answering	37		5		4		3	
TOTAL	607		588		332		268	

Hobbies

Hobbies also tend to increase in importance as the separation between work and nonwork time increases and as people have greater need for nonwork activities which are challenging and can be "worked" at. Over half of the respondents in each county reported having a hobby activity in 1957. The proportion declined slightly in both counties, from 55 to 48 percent in Monroe and from 53 to 51 percent in Noble, but the differences were too small to be significant.

Hobbies reported by five or more respondents are presented in Table 84. Fishing and hunting were reported most frequently. It may be argued that these are sports rather than hobbies but these classifications are vague and are not clearly distinguished by many respondents, so the various activities are reported as the respondents classified them.

There were substantial reductions in the percentage of people reporting

Table 84. Number and Percent of Respondents Who Reported Having an Active Hobby

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
Yes	317	55.1	282	48.5	173	53.1	135	51.3
No	258	44.9	299	51.5	153	46.9	128	48.7
Total Responding	575	100.0	581	100.0	326	100.0	263	100.0
Not Answering	32		7		6		5	
TOTAL	607		588		332		268	

hunting and fishing as hobby activities in both counties during the study period. In Monroe County, 20.6 percent reported fishing or hunting as a hobby in 1957 and only 12.2 percent in 1962. For Noble County the proportions were 25 percent and 17.9 percent, respectively.

The next most frequently reported hobby in both counties was gardening. This category included both flower and vegetable gardening. The proportion reporting this hobby declined slightly in Monroe County (from 5.4 percent in 1957 to 4.9 percent in 1962) and increased in Noble County (from 4.2 in 1957 to 6 percent in 1962). No other hobby was reported by as much as 5 percent of the respondents in either county.

Participation in Other Leisure Time Activities

Table 86 shows the distributions of respondents by frequency of participation in four other types of leisure time activities participating in or watching sports, attending movies, watching T.V., and reading. Participation in sports was characterized by a shift from watching to taking part in sports activities in both counties, with the shift being somewhat greater in Monroe than in Noble. Movie attendance declined substantially in both counties. Average hours of T.V. watching and reading also declined about equally in both counties. Thus there was no evidence of impact of industrialization on these activities.

Table 85. Types of Hobbies of Five or More Respondents.

	Monroe County				Noble County			
	1957		1962		1957		1962	
	No.	%	No.	%	No.	%	No.	%
Fishing and hunting	125	20.6	72	12.2	83	25.0	48	17.9
Gardening (flowers and vegetables)	33	5.4	29	4.9	14	4.2	16	6.0
Woodworking	22	3.7	24	4.0	--	--	6	2.2
Car Repair, Tinkering with engines and motors	13	2.1	5	.9	--	--	4	1.5
Quilting	12	2.0	7	1.2	4	1.2	--	--
Reading	10	1.6	6	1.0	--	--	--	--
Sports	9	1.5	17	3.0	16	4.8	7	2.6
Photography	5	.8	5	.9	--	--	--	--
Sewing	5	.8	9	1.5	4	1.2	--	--
Music	--	--	5	.9	--	--	--	--
Coon Hunting	--	--	5	.9	6	1.8	--	--

Table 86. Frequency of various leisure time activities or time spent at various leisure time activities.

Activity	Monroe County		Noble County	
	1956	1961	1956	1961
Percent participating in a sport	5.7	12.5	6.1	11.7
Percent spectator at sports event	41.0	29.2	47.1	33.3
Mean number of movies attended during the year	4.3	2.2	3.4	1.5
Mean hours per week spent watching T.V.	11.9	11.3	10.3	9.4
Mean hours per week spent reading	6.7	6.1	6.6	5.8

SUMMARY AND CONCLUSIONS

This monograph reports the results of a longitudinal study of two counties in eastern Ohio. One county, Monroe, bordering the Ohio River, was the site for location of a large industrial development. The other county, Noble, bordering Monroe on the opposite side from the industrial location, was similar in most other respects and was used as the control county in the comparative analysis of change. Two surveys were made, one in 1957 and the second in 1962, using essentially the same instrument and the same area probability sample. Data from other sources, such as census and state and county records, were also used in testing a series of hypotheses regarding expected changes attributable to the industrial development in Monroe County.

The impact of the new industry was felt in many facets of the life of Monroe County and its communities. There is little doubt that the tempo of life in Monroe County was increased and its isolation from the rest of society was decreased. Traffic increased, transportation facilities improved (a local bus system and schedules were established), and the volume of visitors increased sufficiently to require the construction of a motel (the first one in the county) as well as an additional eating place.

Population Characteristics

Population trends in the experimental county indicate that the post-war decline continued, but probably at a declining rate, until the beginning of the construction work on the new industrial plants in late 1956. After that, some increase in population occurred with possibly some net in-migration. The absence of yearly population counts makes it impossible to pinpoint the time at which the reversal in trend occurred or to state with certainty that there was net in-migration to Monroe County during the period 1957-60. The fact that the loss in total population for the decade was only 0.6 percent for Monroe, compared with 6.5 percent for Noble, strongly suggests that there was net in-migration in Monroe during the period 1957-60.

Associated with the changes in population trends was a change in the population mix or the proportions of the population in various age, educational, and occupational groups. The proportion of the population in the working age range increased in Monroe and decreased in the control county. The average size of household increased among the households of the younger cohorts of heads, reflecting the influx of younger working families, but remained essentially constant for the total sample.

Likewise, the educational levels in Monroe County increased for the age cohorts most effected by migration but not for the total population. In Noble County they remained about the same.

Residential Migration

Mobility of the population increased considerably in both counties in accordance with the trend in the society as a whole. However, the increase in Monroe

County was greater than that in the control county.

Out-migration of youth and young adults declined very little in both counties, indicating that a well-established pattern of out-migration of young adults continued in Monroe County in spite of increased employment opportunities at home.

Almost all household heads in both studies and both counties said that they expected the youth of the area to leave the county when they grew up. This poportion declined as expected, however, in the experimental county in the second study. When asked about the intentions expressed by their own children 16 to 25 years of age living at home, three-fourths of those who expressed an opinion in the experimental area in 1957 said the youth expected to stay. This decreased to 49 percent in 1962, about equal to the control county which showed essentially no change in comparable proportions for both studies. The experimental county youth showed a substantial change in their pattern of expectations toward a more realistic appraisal. However, the direction of the change was just the opposite from that expected after the new plants were built.

Farm population declined in both counties at about the same rate, indicating continued response to general conditions affecting farm to nonfarm movement and little or no visible effect on farming as an occupation of expanded employment opportunities in Monroe County.

There was evidence of some migration out of the back country toward the hard-surface roads but this was more limited than expected. A scattering of new or remodeled houses developed throughout the eastern half of the county. Thus, some of the anticipated growth in village and urban population did not occur. Apparently most of those who wished to live in an urban center located in the nearest city across the river in West Virginia.

Occupational Status and Income

The percent of the population over 14 years of age who were in the labor force was higher in Noble County than in Monroe County at the beginning of the study period but it increased more rapidly in Monroe County and thus was nearer the Noble proportion at the end of the period. Farm labor decreased as did the number of farmers, but the proportional change was about the same in both counties.

Both counties experienced a shift of labor from farm to nonfarm employment. Employment in manufacturing increased in Monroe County, while relatively little change occurred in Noble County. The opposite trends occurred in mining, with a reduction in Monroe County and a moderate increase in Noble County. The expected increase in nonmanual workers relative to manual workers in the experimental county did not occur. This is explained by the fact that Monroe County residents did not have the training and skills necessary to obtain their proportionate share of the new nonmanual jobs made available. Most of the increase in employment opportunity available to Monroe County residents occurred within the range of skills included in the manual labor category and the bulk of the new employees with white-collar jobs resided in West Virginia. Over-all, however, there was some increase in diversity of occupational skills. At least the number of specific job titles increased.

Job mobility, as measured by number of job changes per year for household

heads, increased about equally in both counties. However, when measured by the proportion of the employed heads of households holding the same job for a 5-year period, the Monroe County labor force was clearly the most mobile.

Total payroll or money paid for wages by employers located in the counties increased nearly 20-fold in Monroe County and only 20 percent in Noble between 1955 and 1961, reflecting very clearly the impact of the new industry in Monroe. However, only a fraction of this increase went to Monroe County residents.

Retail sales also increased more in Monroe than in Noble County. Tax revenue increased in both counties but more sharply in Monroe than in Noble. Because the plant was located in the open country, tax revenues increased more rapidly for unincorporated than in incorporated areas.

Welfare payments in Monroe County reflected the needs generated by family dislocations associated with construction work and by the job dislocations accompanying the shift from construction to production work.

Aid to dependent children payments did not reflect any impact of the industrial expansion in Monroe County but aid to the aged reflected the general improvement in income levels. Aid to the aged payments decreased in Monroe, while they increased in Noble. This occurred simultaneously with an increase in the number of aged in Monroe and a decrease in the number of aged in Noble County.

Level of Living

Income level of living indicators reflected a substantial stimulus from the industrial expansion in Monroe County. Median family incomes rose more rapidly during the decade in Monroe and possession of material items considered indicative of level of living increased more during the study period. Incomes of plant employee households were more than double the incomes of other households. The median increment in income attributed to the plant job was $2,000.

Employment at the plant had a limited effect on geographic distribution of purchases. For most "goods," such as groceries, the shift was from sources outside of sources within the county or from sources outside to sources within the local community. In the case of some services, however, the shift was in the opposite direction.

Agriculture

Agricultural resource organization shifted slightly toward a more labor extensive pattern. Dairying was replaced by beef production as the number one enterprise. Poultry production declined in importance and farm forests increased in importance. The shift was somewhat greater in Monroe than in Noble. Mechanization increased about the same in both counties but Noble County was more mechanized to begin with than Monroe County.

A decline in the use of selected farm practices in both counties is difficult to explain but may reflect some general decline in the importance of agriculture to some people in the area. Most of the decline, although not all, occurred among

part-time farmers whose numbers increased more in Monroe than in Noble County.

Communications and Sources of Information

Neither county contained a city large enough to support a daily newspaper but dailies came in from a variety of outside sources. Although the number of different dailies read declined in both counties, indicating some stabilization of choices, the proportion of households subscribing to a daily increased in Monroe and declined in Noble. The decline in the number of different dailies read may also reflect the general decline in the number of dailies published in the nation. Despite the resultant convergence, the proportion of Noble County households subscribing to a daily newspaper was still higher in 1962 but a higher proportion of dailies read in Monroe came from the larger cities in the area.

A shift from farm to other magazines, such as the news and pictorial magazines of national circulation, occurred in both counties. The decline in proportions subscribing to farm magazines and the increase in proportions subscribing to other magazines were greater in Monroe than in Noble. This was true for the farm household sample as well as for the total sample.

Although the use of mass media in obtaining farm information declined in both counties, there was evidence of increased technical sophistication in Monroe County in the shift away from reliance on neighbors and relatives, as sources of information and advice in agriculture, to a greater reliance on technical specialists, particularly county agents. The fact that this occurred in Monroe and not in Noble may reflect the increased extension staff in Monroe more than any effects of industrial expansion. An increase in frequency of farm visits by the agent in Monroe and a decrease in the frequency of such visits in Noble are further evidence of the importance of the added county staff in explaining the increased use of the extension service in Monroe County.

The proportion of heads of households with special training for nonfarm jobs increased slightly in Monroe and decreased in Noble, while the proportion with special training for farm work declined in both counties.

Attitudes and Opinions

The first survey was taken after the first flurry of activity in construction had started. Almost all Monroe County respondents approved of the new plants. Nine out of ten expected their communities to benefit and six out of ten expected to benefit personally from the development. Five years later almost all still approved but some were not sure that their friends still approved. The proportion thinking their communities had benefited was the same but the proportion saying they had personally benefited was substantially smaller than the proportion expecting to benefit. The major reason for the change was disappointment concerning employment opportunities. Noble County respondents were equally approving of the plants and four in ten optimistically expected to benefit personally. Disillusionment was more complete in Noble than in Monroe. However, only about one in ten said they had benefited and most of these reported benefits of a general or indirect nature, such as increased business activity or more money in circulation.

Certain groups, such as older people, farmers, or people with fixed incomes, were identified as objecting to the new plants in 1957. A longer list of smaller, more specific groups was identified as objecting in 1962. Changes in opinions about which groups benefited most reflected the intimacy of experience with the industrial expansion. Responses in both counties tended to reflect general culturally determined expectations in 1957. In 1962, most Monroe County respondents could answer out of experience but in Noble County large proportions of respondents were unable to give a good answer regarding what had happened. Concrete experience had a moderating effect on opinion in Monroe. The proportion saying in 1962 that youth benefited more than older people was less than the proportion saying in 1957 that they expected youth to benefit the most and the proportion saying older people had benefited the most or that both groups benefited about equally increased over time.

According to responses to a series of attitude questions, attitudes toward industrial work and attitudes toward farm work did not change significantly.

According to the opinions of Monroe County respondents, conditions regarding schools, churches, shopping facilities, health facilities, neighborliness, and friendliness between town and country people were improving and at a fairly constant rate throughout the study period. Improvement also was felt to be occurring in chances of getting new industry and in chances for the individual to get ahead but the proportion thinking so declined during the study period. Noble County opinions followed a similar pattern except that there was substantially less optimism regarding getting new industry or getting ahead personally. About equal majorities in both counties thought shopping conditions were improving. Health facilities and recreational facilities were described as improving by more people in Monroe than in Noble County and a much larger proportion in Monroe County saw improvement in job opportunities for youth in their county than did Noble County people.

One effect of 5 years of industrial expansion was to increase the tendency of Monroe County residents to identify with Monroe County rather than with the state or their home towns. The expected increase in identification with the county seat town did not occur. Very likely this was because of the unique location of the plants.

Formal Organizations

Because the new plants did not draw to the county as many new persons in the professional and managerial classes as would normally occur with an expansion of this size, the impact on formal associations was less than expected. Although general measures of social participation reveal no important change in either county, social participation by occupational group and by length of residence indicates that industrial expansion probably reduced overall formal social participation by increasing the proportion of new residents in Monroe County. Most of these new residents were persons in the craftsmen and operatives category of the labor force who typically have much lower participation rates than persons in the professional and managerial classes. These new residents were more active, however, than old-time residents in the same occupational categories.

Organizational activities concerned with occupational and related affairs increased more than most other kinds of organizational activities.

Organizational initiative in county affairs shifted from farm organizations to civic and service organizations and leadership roles shifted from ministers, elected officials, and county agents to businessmen in Monroe County. Although there were changes in leadership roles in Noble, they followed no particular pattern.

The number of different organizations or groups credited with taking the lead in getting things done in the county increased in both counties. It increased more in Monroe, indicating that some changes in leadership roles were probably stimulated by the industrial development in Monroe. Changes in local community leadership roles were much less marked.

Informal Associations and Leisure Activities

Visiting patterns expanded geographically but the expected switch from visiting with kin to more visiting with nonkin and more informal social participation did not occur. Visiting with kin actually increased.

Leisure activities were the least affected of all activities observed. Participation in vacations, hobbies, movie attendance, television viewing, reading, and sports either remained relatively constant or changed in a manner comparable to change in the control county.

Factors Limiting Impact

Although employment effects were among the most marked, they were much less than might have been expected. Construction work and later the operation of the new plants added a substantial number of jobs to the total available in the county but the residents of Monroe County got relatively few of them. They got only about one-fifth of the construction jobs and about one-fifth of the more permanent production jobs. Another one-fifth of the production jobs went to new residents of the county but the remaining new jobs were held by people living outside the county. Most of these people lived across the river in West Virginia.

Two factors explain this result. First, the industry's choice of location on the river, a necessary factor, and away from the established population centers of the county made it difficult for new employees to find satisfactory housing and community facilities in the county and within easy commuting distance of the plants. The nearest urban place with the desired community facilities was across the river in West Virginia. Many used the ferry or even rowed across the river in boats to get to and from work before a new bridge was completed.

Secondly, most of the new jobs which went to Monroe County residents were in the blue-collar labor category. Several factors contributed to this but most important was the lack of professional and technical skills in the Monroe County labor force. Prior to the introduction of the new industry, Monroe County had few positions which required professional and technical skills and 100 years of selective out-migration had its effects on the quality of the labor force.

The unique location of the plant also had a blocking effect on the stimulus to the business community which usually accompanies the introduction of a major

expansion in industrial payroll. Although the expansion in payroll was massive, its effect on local commerce was greatly limited by the fact that the majority of the new pay checks went to people living outside the county. Thus, much of the money never entered the exchange channels of the county. Given the differential distribution of professional and technical salaries between natives and outsiders, it is safe to say that no more than one-third of the new payroll was spent in Monroe County. The rough physical geography of the river front greatly limited the development of new communities and residential areas in the vicinity of the plant.

A third factor which held the stimulating effect below what might have been expected was the fact that no satellite industries have developed. The self-contained nature of the new manufacturing operation apparently accounts for this. The principal operation in the new plants is the processing of aluminum into ingots and then into sheet aluminum. The partially processed ore is brought up the river in barges and the sheet aluminum is shipped out to company-owned facilities located elsewhere for further processing or fabrication into products available on the general market.

Because the location factor severely restricted economic impact, other impacts have been more limited than might otherwise have been expected from such a massive injection of industrial activity. Change was greatest in systems of interaction most closely associated with occupational roles but the importance of occupational roles is so great that change in them is usually followed by change in other roles. The force of change in such a chain reaction is diluted or dispersed as it moves outward from the center of impact in a manner similar to the movement of the ripples caused by a pebble dropped into a quiet pool. Just as it takes time for the ripples to reach the more remote shores of the pool, it takes time for the impact of social change, originating in the occupational structure, to reach the more remote areas of social activity. Thus, 5 years is a relative short period for the measurement of social change in some of the more remote areas of social activities. Employment and commercial exchange were immediately and markedly affected, formal associations concerned with occupational activities were substantially affected, formal associations not directly associated with occupational activities were less affected, informal associations were affected some but leisure time activities showed no measurable effects during the 5-year study period. If the study period was extended to 10 years, it is likely that measurable effects would be observed in these more remote areas of social activity.

Although the emphasis on progress in American society tends to glorify change, not all of the values of people, even in American society, are best served by rapid change. By focusing on how much more extensive the benefits to Monroe County might have been if the plant location had been more central and if circumstances for expanding housing and community facilities had been more favorable, it is easy to overlook the social costs which would surely have accompanied the increased benefits. The social systems of Monroe County had been organized around the conservation of declining resources for a long time. The relative high state of development or "efficiency" attained for this objective is illustrated by the fact that a number of the residents at the time construction on the new plants began were retired persons who had moved to the county from other places because the environment in Monroe offered what they thought was the best available environment for getting the most return out of limited resources.

Industrial expansion caused some abrupt alterations of the circumstances

which made Monroe County attractive to persons with fixed incomes. Rents, for example, which had tended downward and were quite low, suddenly started upward. During the period of interviewing for the benchmark study, 1957, many residents complained of the sudden doubling or tripling of rental rates on housing.

More important but less concretely visible than changes in cost of living items were changes in social organization. A prolonged period of decline had increased the emphasis on conservation and, consequently, accentuated the power positions of persons owning land resources and older persons with relatively fixed income levels. Adding industry reversed this trend. This was illustrated by the shift from farm organizations to service organizations as "leader" groups. Typically, farm organizations are dominated by the philosophy of the older retired or semi-retired land owning members and thus are very conservative with regard to social change. Service organizations, junior chambers of commerce, and industrial development committees, in contrast, are dominated by the younger business and professional men and are typically more liberal with regard to social change.

Because of the effects of a prolonged period of static or declining socio-economic organization, the communities of Monroe County were not prepared to accept as much and as rapid a change as the sheer size of the new industrial input justified. They lacked the personnel to man such a development and they lacked the technological and social organizational base from which to launch a development appropriate to the size of the stimulus made available. If the importation of personnel, technological competence, and social organization had been made more feasible, in fact more imperative, by locating the plant in the center of the county and thus away from the reservoir of technical competence and social organization resources present across the river in West Virginia, the social costs of rapid change to the existing social systems in Monroe County would have been much greater.